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ORIGINAL ARTICLES.

NOTES ON PLAGUE.

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BEFORE dealing with plague specifically in Calcutta it will be advantageous to consider epidemics of plague in other places, and what lessons can be learned from previous experience of this disase. We have to deal with a specific, febrile, infectious disorder, and plague presents the difficulties common to the other infectious diseases, with difficulties peculiar to itself, such as the length of time during which it will persist and recur in a place and its disregard of any measures adopted for its abolition or cure. There have been more epidemics of plague in the world than of any other disease; and it has been widely spread, devastating whole populations.

General View.—It is believed to have first appeared in the Delta of the Nile, in A. D. 542, and spread over Egypt to Constantinople, where it is said 10,000 people died in one day. It spread over the whole Roman Empire and north of Africa in the succeeding century. In the fourteenth century nearly the whole of Europe and England were over-run by the plague, one-fourth of the population of Europe, 25,000,000, being estimated to have died. It recurred in the fifteenth century in Europe and England, and Henry VII. left London for France, on account of a bad epidemic there. The same story is told of the sixteenth century, in which 1000 people died weekly of plague in London during an epidemic in 1563-64. The last case reported in England was in 1679, and during the 76 years between 1603-79 plague was absent from the death returns on four occasions only, in 1629, 1633, 1635, and 1670; the total mortality being 188,571. From toward the end of the seventeenth century the disease showed a tendency to retrocede eastward, and although during this and the eighteenth centuries it was prevalent in France and other parts of Europe, the areas affected were much diminished. In this nineteenth century there have been more or less severe outbreaks over limited areas of Europe and in Persia; the last appearance in Europe being in the Russian epidemic of 1878-79. This will show the lengthy period over which the disease will manifest itself, and no subsequent history is calculated to lead us to suppose we can get rid of the disease after one outbreak, in other words "stamp out" the plague, a phrase which has often been in some men's mouths in India since 1896. Take, again, the outbreak in Ahmedabad, in 1618, said to have started in the Punjab in 1611, and lasting for eight years; again starting in 1812 in Cutch and spreading to Ahmedabad, devastating large tracts of country till 1821; the next outbreak at Pali, in 1836, lasted till 1838, killing 60,000 people. The first accounts of trustworthy details of plague in India refer to this epidemic in Cutch, which broke out at a time succeeding a severe famine.

The origin of the disease is a mystery, but the origin of other well understood diseases, *e.g.*, syphilis, is also unknown. The conditions favoring the persistence of plague when once it is introduced present a uniform consistency, and there is no material deviation in the observations of authorities as to what they are, although as such conditions existed before the disease manifested itself, and continued after its cessation, they help us to no solution as to the origin of the disease. The conditions are want of light and air, overcrowding, and poverty, and the very often accompanying personal and general surrounding filth. In exemplification I may quote one remark about the people of Dholera, a locality affected during the above-mentioned epidemic in Cutch: "They wear large quantities of clothes which are not changed till they drop off rotten with filth. The filth is ingrained in their skins." The disease as regards one point particularly is like typhus, in that it attacks people living on the ground floor of a house much more than, and in decreasing ratio, those living in the higher ones. This fact was observed in Bombay in the epidemic 1896-97, but may be partly accounted for by more over-crowding on the ground floors. An instance may be given from the Cutch epidemic. Among the places to which it spread was Moroi. A medical officer who reported on the outbreak says that the Thakur's palace, containing about 100 people, escaped completely. It was a large well-aired place, elevated above the other parts of the town. Equal immunity was enjoyed by a small village situated on the opposite side of the river less than a quarter of a mile away on a very high and exposed situation, although there was daily and hourly communication between the village and the infected town.

There is nothing in the history of plague to show that climatic conditions have any effect upon its progress or cessation. It has prevailed in hot, cold, dry, and wet seasons, and any changes in the prevalence of the disease at certain seasonal variations seem to be purely coincidental, and determined by the natural course of epidemics, ascent, height, and descent. To sum the case up briefly, after a study of the conditions under which plague has prevailed, we are not advanced beyond the knowledge that other infec-

tious diseases, such as typhus, have prevailed under similar conditions, poor, ill-fed, dirty populations living in crowds with absence of light and air. Improvement in such conditions in Europe, improvements which have taken generations to effect, may reasonably be said to have caused the retrocession of plague thence.

Mode of Transmission.—Although the origin of infection may defy elucidation, once the disease has manifested its presence opportunities occur for observing the method of its transmission from person to person, and place to place. More or less definite modes of spread have been determined for various of the infective fevers. Allowing that each infective disease has a poisonous entity outside the body, it is wide of the purpose of this article to discuss the mode of entry of such into the body, as we cannot expect to know of plague yet what we know of none of the infectious diseases, that is, how the poison enters the system. One point I may just refer to, as it seems proved in some men's minds. The preponderance of femoral buboes in plague is supposed to show that the infection took place through abrasions or cuts on the feet; personally I have not been able to find such abrasions, and the only cases in which there was a solution of continuity of the skin affording a possible channel of entry, the bubo in the femoral region was on the opposite side. In one hospital in Bombay in 1897 the inguinal buboes on the left side were more frequent than the femoral on the same side. The next most frequent sites for the buboes are the inguinal axillary regions. The latter might be accounted for by infection from the hands; but I take the question to be entirely one of "might be." The same order of frequency as to the position of buboes is being observed in the Oporto outbreak at the present time, and it is not stated to be the case that the population all go bare-footed.

To return to the subject of the means of transmission. I think here we cannot separate sharply contagion and infection, and I propose including the former in the latter term. The first point to consider is the communication of the disease from the affected to those in immediate contact. It is almost impossible to judge of the extent to which this may take place during the height of an epidemic, as in a large freely intermingling population one cannot trace the direct connection, and many persons may become infected from a common source apart from any contact with those suffering from the disease. But in the early stages there are greater facilities for proving this mode of transmission. There is clear evidence as to the circumstances under which such transmission will and will not prevail. To take the former case first, ten people assembled every night at a house in Calcutta for gunja smoking. On March 16, 1899, A fell ill with plague, and died on the 20th. (For simplification I will use alphabetical letters.) On March 22d B who lived elsewhere became ill and died the 26th. C and D after a week's illness died on March 28th and 29th, and E died on the 30th, all elsewhere. F fell ill at his house elsewhere, on the 27th and died March 28th, and F's wife was taken on March 30th and died April 2d. They had two sons who, after the mother's death, left the house and went to live elsewhere, and one of them developed plague on April 5th and died on the 7th. This case, details of which were obtained after great trouble by Dr. Justice, in charge of the district, shows how infection can be carried by human beings; except in the cases noted, no spread could be traced from the infected people; although such may have been the case. The facts related, while distinctly showing that the infection can be carried from man to man, also exemplifies the comparatively small part such a method plays. Opinions may differ as to the extent the disease is spread by direct personal transmission, under the conditions of dirt, and over-crowding in ill-lighted and ill-ventilated habitations. French physicians who studied an epidemic in Egypt in the early part of this century declared against the disease being contagious. However this may be, there has long been an unanimous opinion that under conditions of light and air, plague infection is at a minimum. Going back to the plague in Pali, in 1836, Dr. Rennie, in his report, says: "I feel no hesitation in professing my belief that a man in sound health, provided he continue to breathe pure air, might safely keep his hand a whole day in contact with any one suffering from the Pali fever; but, if he sat within the same hut and inhaled the same tainted atmosphere half the time, he would probably be seized with similar illness. None of the medical officers or even native assistants, who handled patients affected with the Pali disease and felt their pulse for days and weeks have suffered."

To give instances in later times, in a plague hospital in Bombay, in 1897, of about 400 people who visited patients and in some instances remained constantly with them, not one contracted plague; and I have known a relative to sit on a bed with her arms round the patient for hours without becoming infected. Hospital attendants have been affected, but in a very small proportion. When one considers how a hospital must literally reek with infection, it is not surprising that some individuals, constantly breathing the air for weeks and months together, and in contact with various secretions, should contract the disease, especially if the health was impaired, as has been the case in the instances where European medical men have contracted plague in India and died. Every plague hospital displays the same immunity of visitors, relatives in constant attendance, and the hospital staff. Another point bearing on the same subject is that persons removed to a segregation camp from any infected locality cease to suffer from the disease. In the camp contiguous to the Plague Hospital at Bangalore, of which I had charge in 1898-99, there were 1598 people admitted of whom 51 developed plague, and the large majority of those in the first day after segregation, having evidently been infected

on admission. These people took the same clothes to the camp as they wore at home. It is needless to multiply instances. This is sufficient to allow us to make one positive assertion about the plague, *i.e.*, that the source of infection is deprived of virulence by exposure to light and air and, moreover, kindly lends itself very easily to such modifying influences.

We are naturally led now to the next step in the causation of infection, *viz.*, fomites. I will give two instances which bear on this. One is related by Hirsch as having occurred at Wetljanka in 1878, 1879. All the inhabitants of a certain house died, and two months after a box of clothing, which had not been touched previously, was sent to another house, the epidemic having disappeared. A girl took some of the clothing and set to work on it, and four days later she developed plague. One other instance occurred in 1897 during the Bombay epidemic. A vessel embarked a crew at Bombay on the 20th of August and arrived in the Thames on September the 11th. There were between 300 and 400 passengers on board, and no suspicion of plague had arisen. On the 26th or 27th of September one of the Goanese stewards became ill and died on October 3d. Another steward who slept in the same cabin as the first mentioned was also taken ill about the 26th and died on September the 27th. Both cases were plague, and the infection was traced to a bundle of clothes which had remained unopened until the end of the voyage. In connection with this, it will be interesting to note some laboratory experiments as to the vitality of the plague bacillus, as such experiments tend to bear out what has been observed as to the lessened danger of infection when in the presence of light and air. The German Plague Commission, who went to Bombay report that "outside of the body of man or of the bodies of certain animals the plague bacillus shows a notable tendency to perish. Pure cultivations of the plague bacillus from different sources and of different ages in fluid or on solid media were found to be quite dead after 15 minutes continuous exposure to a heat of 70° C. When the heat was 80° C. five minutes were enough for sterilization. A cultivation suspended in water, when examined immediately after exposure to 100° C. was found to contain no living bacilli. Material containing plague bacilli was placed in different ways upon linen, wool, silk stuff, and also upon threads, gauze, filter paper, pieces of glass, earth, etc., kept in different conditions, and tested from time to time as to its infectiousness. The life of the bacilli under these circumstances was at most eight to ten days, and often only two to five days. The infectiousness of bacilli on the dried skin of two mice that had died of plague was extinguished in the one case on the fourth, and in the other on the sixth day. The German Plague Commission also found that corrosive sublimate 1-1000 killed the bacilli at once; carbolic acid 1-1000 in ten minutes. The bacillus is also sensitive to mineral acids, being destroyed in five minutes by pure sulphuric acid diluted to 1-2000. Yet at Poona it has been reported that disinfection and evacuation of houses for ten days only was quite useless, and as the people returned they were attacked with plague within a few days. The weak point of these and similar experiments is that the bacillus is placed and observed under artificial and manufactured conditions, which are not safe for certain guides as to the vitality of infection under natural conditions; of which latter, except as noted previously, we are ignorant. The constant recrudescences of plague in the Himalayan regions of Kumaon and Garhwal point to the infection being kept up in fomites. Articles of merchandise and foodstuffs must be noted apart from fomites, as there is no case on record where plague has been introduced from one country to another, or from place to place in an infected country by such means; suppositions that such may have been the case have been mooted, but there are no facts on record to make them reasonable, at all events during modern times.

The third step in this direction concerns the question of infection from animals. I will confine myself to rats, one of the very limited class liable to plague. I cannot disabuse my mind of the conviction that the spread of infection by rats, even from house to house or street to street, has been magnified out of all proportion by an undue concentration of thought on that limited sphere of the subject. The fact is that in ancient and modern times, an outbreak of plague in human beings has been preceded in many instances by a large mortality among rats. How do the rats become infected? No one knows. There are nothing but theories to be found; for instance, when plague existed at Hardwar, on the Ganges, in 1897, unusual mortality among rats took place at Kankhal, about a mile distant. It is not suggested that infected rats walked that mile from Hardwar, but that the ones resident at Kankhal got infected by food (grain, etc.) taken to Kankhal. Now, what happened; the disease in the rats ended (or the rats all came to an end) and disinfection was carried out where rats had died, and sugar, grain, etc., exposed to the sun for eight hours. This was in the middle of June, 1897, and the last case at Hardwar was reported on the 8th of June. No cases were reported then at Kankhal, and all seems to have gone well until September, communication meantime taking place between Bombay and Kankhal. In the first week in September cases of acute illness with rapid death were occurring, but plague was not declared until the 16th and then became epidemic. I think this case requires no other explanation than human transmission. I can find no instances of infection being carried any distance by rats, and although it is supposed that rats which have died of plague may be carried in grain, it is, on the other hand, stated that the power to infect very soon becomes destroyed in dead bodies. To quote two authorities in support of my opinion, Dr. Bitter and Dr. Rogers, of the Egyptian

Plague Commission, hold the view that rats are of very minor importance in spreading the disease.

Treatment.—The part of the subject of most absorbing interest to the practical physician is the treatment of the disease, or, rather, the treatment of the patient suffering from the disease, as individual cases will present in this, as in all other diseases, symptoms indicating remedies having no obvious relation at first sight to the nomenclature of the complaint. Patients, not diseases, call for treatment. At the same time, certain classes of remedies are adapted to the majority of patients suffering from the more prominent manifestations of the totality of the symptoms, defined by the nomenclature of diseases. I will consider the experience of plague treatment under three headings and confine myself to drug medication, as consideration of vis-medicatrix nature, which is too obviously a minus quantity in this disease, and dieting with general hygienic measures, etc., carry us no way at all. (1) Treatment by what I will call ordinary traditional medicine. (2) Treatment by serum as practised by Dr. Yersin. (3) Treatment, introduced by myself, by snake venoms.

(1) The records under this heading display a collection of compound prescriptions with from three to six drugs given systematically, with various prescriptions for individual symptoms; in short, a routine method of symptom treatment, based on, well, I suppose, orthodoxy! I will take some hospital records in order, and call them A, etc.

A reports: "As regards the effect of medicine, it cannot be stated with satisfaction that we possess any standard remedies of certainty. What might seemingly cure one patient is ineffective in another of the same type (because the patients want treating, not the disease. H. E. D.), and it is questionable whether the successes shown are not wholly due to scientific nursing and hygienic surroundings of a superior nature." The following was the drug treatment in this hospital under which one patient recovered, but it is reported that several others similarly treated derived no benefit and died. Magn. sulph. ℥vi was given to begin with; then every three hours:

℞ Sodii salicyl. ..... grs. v
Liq. hyd. perchlor. ..... ℥ss
Sp. octheris Nit. ..... ℥ss
Tinct. digit. ..... ♏ v
Rum ..... ℥ss
Water ..... ℥iss.

"The object of the above prescription was, first, that the salicylate of soda acted as a diaphoretic and antipyretic; digitalis was inserted both as a cardiac tonic and to counteract any depressing effect which the salicylate might cause. The nitrate was also given to encourage the secretions, and rum for its stimulating qualities. The mercury was added for its alterative and antiseptic qualities under the idea that some poison would be neutralized."

I quote this in full, not to criticise the author of it, but to let it stand as its own comment on a system of medicine which is no practical improvement on Galen's instructions as to determining whether a disease is hot or cold and then administrating a cold or hot drug. We, in this nineteenth century, instead of hot and cold diseases, have ideas as to poisons requiring neutralizing, an idea somewhat akin to the doctrines of the ancient Dogmatists, and we call drugs, instead of hot and cold, alterative, tonic, eliminative, stimulating, etc., classing many drugs with very distinctive actions on the human body, under a theoretical and artificial nomenclature.

Another stock prescription largely given was as follows:

Liq. strych. ..... ♏ iii
Carbolic acid ..... ♏ ii
Tinct. iodine ..... ♏ iv
Tinct. digitalis ..... ♏ v
Aqua ..... ℥i
Every three hours.

In addition there was the usual prescription of morphine at bed-time, Dover's powder for diarrhea and, in short, the indiscriminate symptom treatment of orthodox medicine. I need not multiply these prescriptions, but will give results of various hospitals.

In the above-mentioned hospital the mortality was 60 per cent. Total number admitted, 374. In B hospital, total admissions, 304; mortality, 64 per cent. In C hospital, 86 admitted; mortality, 72 per cent. In D hospital, admissions, 107; mortality, 68 per cent.

I have only mentioned hospitals that were under European officers. All the private and caste hospitals tell the same doleful tale, although treating a smaller number of cases; the mortality being from 60 per cent. to 90 per cent. These figures include all cases admitted, many of them in a moribund condition, and some dying in 24 and 48 hours. There is no other reliable way of judging the effects of any treatment; selection of cases or omission of those dying within a certain time are fallacious and misleading; and treatment of an acute febrile disease which fails to alleviate the tendency to death in 48 hours must be said to have failed. It will be instructive to quote two more extracts regarding two of the above hospitals, as showing that a theory of the nature of a disease and of the action of remedies does not help us.

"As a special mode of treatment liq. hydrarg. perchlor. was resorted to from a conviction of the value of such a powerful disinfectant in specific disease, and the likelihood of its being useful as an intestinal disinfectant and bactericide. The general result of the hospital treatment may be attributed to this mode of medication (with remedies for prominent symptoms and complications), and gave 69 per cent. of recoveries, excluding cases moribund on admission, and those treated by Yersin and Haffkine . . . . . but it is only right to state that many cases treated

early and vigorously with this drug died, after perhaps temporary benefit and prolonged life."

"In one remarkable case which died six days after admission from double bronchopneumonia, and under full doses of mercury, the German Plague Commission found plague bacilli on three different days in the blood-cultures, but the day before death and at the post-mortem not a single plague bacillus could be demonstrated in the blood or any of the organs. Their conviction was that the patient died from the severe complication,[1] and had his vitality been greater and no complication supervened, he would certainly not have died of plague, all the bacilli being destroyed." No doubt comments on this will suggest themselves, especially to those of a humorous turn of mind; personally I will only say it reminds me of the story of the Frenchman who tried the experiment of keeping his horse alive without food, and was succeeding nicely when the animal died. The other and last note on this subject which I shall give says that "as no specific has hitherto been discovered for the plague, the treatment resolves itself into the carrying out of the general principles of medicine as applied to the treatment of symptoms arising in the course of the disease. The stimulant method and the administration of liq. hyd. perchlor. have both been given the fullest trial, and both have proved equally inefficacious in either controlling or checking the disease."

(2) Dr. Yersin has been chiefly associated with the antitoxin serum treatment of plague, and as there are fuller records of the use of his serum than that of any others of a similar kind, I shall only deal with his, other serums having also the same dismal tale to tell. The antitoxic preparation was obtained from the horse, the animal being inoculated with plague virus, until lethal doses were inoperative. The blood serum then injected into another animal "effectively hinders the reproduction of the bacilli and the formation of toxins." Before going further I must say that in this attempt at treating plague there was a step in the direction toward which all scientific and beneficial therapeutics is now treading—*the single remedy*. I will give the hospital experiences of the treatment, and Dr. Yersin's own tabulated statement.

The report of A hospital says: "Professor Yersin visited the hospital on two separate occasions and declined to use his curative lymph. The many patients present, were, in his opinion, unsuitable to his purpose or otherwise far advanced in the disease."

In B hospital, 23 cases of plague were treated; but there is no mention as to their being selected, which vitiates results. Of these 13 died and 10 recovered, giving a mortality of 56 per cent. "Delirium seemed to be lessened by the serum. No improvement in the general condition of the patients could be seen, and the inflamed glands were certainly not favorably affected." In one case, serum having the guarantee of Dr. Roux and Dr. Yersin was used in a case not of severe type, and, according to Dr. Yersin, a suitable one for curative serum treatment. "Fresh buboes appeared, the primary ones became larger, more inflamed with increased surrounding edema, and the little patient died. This child, aged four years, was injected 42 hours from the initial sign, with a full dose of 40 c.c." In C hospital 4 cases were treated, the cases being selected and one being a doubtful case of plague. The other three died, and it was reported that the injection caused intense local discomfort, and "when two of the patients were conscious they dreaded a repetition of the process." In D hospital 4 cases were treated and 2 died.

When Dr. Yersin first went to Bombay he treated cases in all parts of the city and his results could not be compared by others, and he was asked to confine his treatment to the hospitals; the result of which is shown above. A statement he himself submitted to the Plague Committee gives:

17 cases treated first day of illness, mortality 12 per cent.
17 cases treated second day of illness, mortality 35 per cent.
12 cases treated third day of illness, mortality 50 per cent.
3 cases treated fourth day of illness, mortality 66 per cent.
1 case treated fifth day of illness, mortality 34 per cent.
Total of 50 cases, 34 per cent. mortality.

Before closing this part of the subject I cannot refrain from emphatically protesting against a system which has been in vogue when experiments with these serums have been made; and that is, having control cases. I think such an idea discreditable to any members of our profession who propose it. If any treatment offers any ground of hope of being successful, every patient should be given the chance of his life, and treating one case while leaving an alternate one, to watch if he will recover or die, is perilously near trying to improve medicine by murder. This may seem strong language; I intend it to be. If the Almighty has left us so helplessly in the dark as to treating the pains of the highest of His creation with the means He has given to our hands in the shape of medicinal plants, etc., rather than have recourse to such an unjustifiable system of playing with human life, let us renounce the practice of the profession until light be shed. Happily, such need not be, nor are we without a guide to treatment; but I must be content here to enter a protest against such counter-control experiments.

(3) The past history of the treatment of plague shows the use of every class of drug in the pharmacopoeia, tonics, cardiac and nervine stimulants, antiseptics, anodynes, antipyretics, diaphoretics, eliminative, et. id. *genus omne;* members of one class administrated with members of another class, and the result has been beneficially nil. The profession displays a wonderful consensus of opinion as to this. I venture to include my own treatment in considering this subject, because, like others, I have also my convictions, and my conviction about this is that the method of treatment I started in India offers

[1] This severe complication (t) is a very common and essential symptom, and an early manifested one of the clinical course of plague. H. E. D.

a better hope of success than anything of which we have present experience. I was influenced largely in volunteering for plague duty, when officers of my service were called for, by the conviction that means existed for reducing the awful death-rate. The limits of this article preclude my entering into full details, but I may say that I applied the principle which guides us in treating any disease, a principle which is now daily becoming wider spread, with consequent benefit to humanity. There is an acute disease, killing often with fulminating rapidity and clearly requiring a rapidly acting remedy; a septicemic disease, with early marked manifestations in the central nervous system. What remedies are indicated? It is becoming daily, as I said, more and more apparent that a remedy for any disease is one which acts on the same tissues as are affected by the disease. Trying to differentiate drug action *ab usu in morbis* has been tried for centuries, and has failed. Such action must be elicited by experiments on the healthy human body. The poisons which act on the same tissues as the plague poison, and, moreover, with startling rapidity, are the snake venoms. The success which had attended the treatment of yellow fever in America by the rattlesnake poison gave me a good precedent for my hope of similar success in plague. My opportunities in Bombay in 1897 were very limited, as the hospital in my district was put under a native hakim with whom I had orders not to interfere; it being hoped that letting the native have their own medical attendance would induce them voluntarily to go to hospital.

However, without treating on the susceptibilities of hakim or patients I managed to treat many of the latter, and the former took a great interest in the subject. The hospital was opened April 20, 1897, and I ceased connection with it about the middle of July. Fifty cases were treated of whom twenty-two died. The Government report says, "It is impossible, owing to the singular character of hakim's medicines, to give any account of the general treatment adopted. But the ratio of mortality is satisfactorily low, being 44 per cent. or nearly 9 per cent. below the mean rate of all hospitals." I used almost entirely here the Lachesis trigonocephalus administered by the mouth in the cases in which I used snake venoms. I must here make a further statement about this hospital, records of which are published to the end of 1897. Up to that time 158 cases were admitted, with the singularly low mortality of 31 per cent. I have reason to believe the treatment by snake venom was continued after I left, but, whether or no, I must give hakim Din Mahomed Bhagin credit for such a record.

(To be continued.)

Women Nurses in the Army.—The Chicago Medical Society recently endorsed a bill urging the appointment of women nurses in the medical department of the army.

EXPERIMENTAL RESEARCHES ON THE EFFECTS OF INCREASED BAROMETRIC PRESSURE AND OF FOREIGN BODIES IN THE PHARYNX, ESOPHAGUS, TRACHEA AND LARYNX.

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(Continued from page 129.)

III. Foreign Bodies in the Trachea and the Larynx.

Preliminary Remarks.—In cases of foreign bodies in the respiratory tract there is often from the symptoms alone great difficulty in determining their location. It is difficult also to decide whether or not an operation is indicated and, if indicated, where this operation is to be performed. The number of futile attempts at finding foreign bodies, and the number of catastrophies that have followed such accidents, suggested the following research.

Protocols.— The following experiments were made with a view to ascertaining the comparative values of chloroform and ether in point of safety in operations involving the upper air-passages.

1. On a sixteen-pound mongrel, in a fair condition, under ether anesthesia, the following dissections were made: Both vagi were dissected free from the carotids throughout the length of the neck; then the superior laryngeals were dissected out from their origin in the vagi to their entrance into the box of the larynx; next the glossopharyngeal was dissected out from its exit from the cranial cavity to its terminals in the muscles; finally, the hypoglossal was similarly dissected, thus exposing these structures on both sides. During the dissections the animal breathed fairly well without requiring much attention to the ether anesthesia, which was administered by means of a tracheal tube to which a rubber tube and funnel were attached in which latter cotton-wool was thrust. Manipulations of these nerves, especially of the vagus and inferior laryngeal, interfered with the respiratory as well as the circulatory action. In no instance, however, was it necessary to supply artificial respiration.

2. Dissections under chloroform anesthesia were carried out as similar to the preceding as possible, occupying as nearly as possible the same length of time in their performance on a seventeen-pound bird-dog. During the anesthesia it was noted that the blood-pressure would sink whenever the respirations became slowed and that the pressure would recover itself upon removal of the anesthetic. Early in the experiment it was found necessary to maintain artificial respiration for a short period of time, and during the latter part of the dissection respirations became extremely shallow and weak. Manipulation of the superior laryngeal or the vagus

interfered with the respirations more markedly than in the preceding experiment.

3. The following experiment under ether anesthesia on a water-spaniel weighing twenty-four pounds was performed. The trachea and the larynx were both dissected free, the trachea severed at the cricoid junction, then the superior laryngeal was dissected out from its origin to its termination on both sides of the neck. A finger passed up within the larynx produced thereby an irritation in the area for inhibition. The superior laryngeals were stimulated by the faradic current, thus producing temporary arrest of respiration and complete inhibition of the heart's action. On cessation of the stimulation, both the cardiac and the respiratory actions were resumed. After this the animal was allowed to

Fig. 7.

Experiment on the removal of a laryngeal tube by means of external manipulation.—The upper tracing represents the respiration, the next the blood-pressure, below which are the signal and the time.

rest undisturbed with these structures exposed to the air. The respirations were decreased in amplitude and in frequency, but at no time ceased, excepting when some special irritation produced reflex inhibition.

4. A bull-terrier, weighing twenty-eight pounds, in fair condition, was subjected, under chloroform anesthesia, to as nearly as possible the same procedure as in the foregoing case, occupying about the same length of time, with the following result: The reflex inhibitions on both the respirations and the heart were, under chloroform anesthesia, comparatively more profound. During the dissection respirations were so shallow as to cause considerable cyanosis, and for a time artificial respirations were supplied. At the close of the experiments, when the animal was allowed to rest, the respiratory action was extremely feeble and the blood-pressure had fallen more than one-half from its original height.

5. The following experiments, under ether anesthesia, were performed on a mongrel cur, weighing eighteen pounds: The superior laryngeal nerves on both sides were exposed and subjected to stimulation by mechanical manipulation, producing thereby a reflex arrest of respiration. The faradic current was then applied, producing reflex inhibition of both the respiratory and the cardiac action. This was repeated twice on each side. The normal action was regained with a fair degree of readiness after cessation of the stimulation in each instance. Artificial respirations were not required.

6. On a healthy water-spaniel, weighing twenty-two pounds, during the technic of dissecting out the trachea and applying the tracheal apparatus for maintaining anesthesia under chloroform, respirations ceased and artificial respiration was supplied during a period of five minutes, after which very slow, voluntary efforts were noted, gradually increasing in amplitude and rapidity until an over-respiratory action and recovery occurred. On reducing the animal to surgical anesthesia again, a like result was observed. During the experiment, carried out as nearly as possible as in the preceding case, the respirations were very much slowed and quite shallow, so that it was difficult to obtain a good tracing. In these experiments the larynx was exposed to all kinds of rude manipulation, for the purpose of facilitating a comparison between the results under chloroform and under ether anesthesia.

7. This experiment and the following were performed for the purpose of determining whether or not traction on the trachea from the lungs upward, or from the larynx downward, or lifting the entire trachea forcibly out of its bed, caused an effect upon the blood-pressure and the respiration. The trachea of a healthy twenty-pound mongrel was freely exposed under ether anesthesia by bloodless dissection, and after securing a control tracing of the respiration and the blood-pressure, a hook was placed between the rings of the upper portion of the trachea, and the latter organ was pulled strongly upward from the lungs in the line of its own axis. This produced no effect upon the respiratory rhythm, but it caused a fall in blood-pressure, this fall taking the form of a rather sharply rounded curve, from which it quickly recovered. Then, repeating the same maneuver, like effects were produced. The line of traction was then reversed and the trachea dragged downward on the line of its own axis, producing a dragging upon the entire larynx and the pharynx. This was followed by a decided fall in the blood-pressure and a temporary slowing of respiration. This experiment was twice repeated, with like results, although in each subsequent repetition

the phenomena were not so marked as in the one immediately preceding. In dragging upward on the trachea, when the dragging was quickly applied, the fall in blood-pressure was correspondingly more abrupt, and suggested the probable action of mechanical causes interfering with the return circulation in the venous trunks which pass in such close anatomical relation to the trachea.

8. The animal, a fox-terrier, weighing twenty pounds, was subjected to experiments similar to those in the preceding case The phenomena attending upward traction on the trachea were practically the same as in the preceding case, except that there seemed to be some increase in the depth of respirations. On dragging down on the trachea the respirations were more decidedly slowed, and for a short period at the first dragging respirations were arrested. On raising the trachea with some force up out of its bed results similar to dragging down upon the trachea were produced.

9. Experiments, under ether anesthesia, similar to the preceding were performed on a forty-pound bull-dog with the same results, except that in dragging down forcibly upon the trachea there was a distinct inhibitory action upon the heart, whereby sweeping slow beats were executed during the period of most forcible traction. Raising the trachea up from its bed with considerable force produced similar symptoms, although less marked.

While the first six experiments involved the mere dissection and thorough stimulation of certain nerves, they confirm what has been very frequently observed in other experiments upon the respiratory tract, *viz.*, that animals under chloroform anesthesia are decidedly more liable to respiratory failure than animals under ether anesthesia. While it is recognized that it is very difficult to make satisfactory comparative observations, it has seemed that reflex inhibitory phenomena are more profound under chloroform than under ether anesthesia inasmuch as in other experimental work, not relating to this present object and purpose, similar observations have been made. These additional experiments have been made principally to test the effect of dissections upon and about the larynx and trachea, and involving the nerve trunks supplying this area.

The Physiologic Principles Involved.—The physiologic principles involved in this question are practically the same as those indicated under several other headings in this paper, namely, that no amount of irritation of the mucosa or structure of the trachea, even the cricoid portion of the larynx, is capable of producing any marked sudden effects upon either the circulation or the respiration.

Such an irritation, however, if applied to the middle or upper part of the larynx would cause most pronounced reflex inhibitory phenomena. The only reflex phenomena that a foreign body below the larynx could produce is that of coughing. While in the larynx not only coughing may be produced on slight irritation, but on greater irritation reflex arrest of respiration will occur, and on still greater irritation, in addition to the reflex arrest of respiration, there may be reflex arrest of the heart's action, causing thereby a collapse more or less profound. The symptoms of asphyxia from obstruction need never be mistaken for those of reflex inhibition from the laryngeal area.

In the case of asphyxia from obstruction, the respiratory as well as the circulatory activity will continue. The pulse will be strong and full and slow, until, finally, after from five to eight minutes, there will be intermissions, then irregular actions, then intermissions until the heart ceases in diastole. In reflex inhibition there is sudden collapse, with sudden cessation of respiratory action, and, if the circulatory action is also affected, there will be no arrest of the heart as sudden as the arrest of the respiration.

Differential Diagnosis of Tracheal and Laryngeal Lodgments.—A foreign body lodging in the trachea and not dislodged from the trachea during the attacks of coughing is incapable of producing any effect other than that indirectly produced by the powerful respiratory alterations in the act of coughing. If the foreign body is so large and the swelling so great as to completely obstruct the tube, the symptoms of asphxia, as above described, will appear. If, however, the foreign body is lodged in the larynx, there are likely to appear attacks of cyanosis, sudden in onset, during which the subject becomes cyanotic, greatly depressed—in short, passes into collapse—and, after a variable period, respirations are gradually resumed, the cyanosis disappears, and the heart again beats normally for that particular case.

A slight movement, a cough, or an attempt at examination, may precipitate such a collapse. Furthermore, supposing a foreign body to have been inspired into the trachea and during a violent fit of coughing to have been expelled from the trachea into the larynx, such reflex inhibition would most likely suddenly appear. If, then, a sudden collapse takes its onset in the middle of the latter part of a severe coughing spell, it may be assumed that that foreign body had not been in the larynx at the beginning of the coughing, but it was forced into the larynx by the powerful expiratory efforts.

Extraction of the Foreign Body.—In all cases of operative procedure to extract foreign bodies from the respiratory tract it seems a judicious precaution to inject a sufficient dosage of atropine to protect the heart against the reflex inhibitory impulses through the superior laryngeal nerve, so that, if respirations should fail, the circulation will be sufficiently guarded and the operation may be completed while artificial respirations are maintained. This is especially necessary in cases in which the diagnosis has been made of lodgment in the larynx.

In cases not so diagnosticated, however, there

is by no means a certainty that in the fits of coughing the foreign body will not be forced into the larynx before the technic can be completed. In cases in which it is practicable, a spray of cocaine or an intralaryngeal application of cocaine is of the greatest service in protecting the patient against sudden collapse. As has been amply proven, experimentally as well as clinically, the local application of cocaine upon the laryngeal mucosa, even with so weak a solution as one-half of one per cent., completely prevents the reflex inhibitory effect upon both the respiration and the heart, no matter to what extent the irritation of the larynx may be carried. In cases in which this preliminary preparation can be satisfactorily carried out, it would give an absolutely certain precaution against sudden collapse or death.

Technic of Operative Procedure.—In every case in which it is possible, local rather than general anesthesia should be employed. The principal reasons for this preference are the following: If the subject can be controlled, so that the operation may be performed under local anesthesia, there is less disturbance, less struggle, and, therefore, less opportunity for dislodging the foreign body; the patient may aid the surgeon in various ways in his attempt to recover the foreign body; and, finally, when the respiratory passages are so occluded as to require the action of extraordinary muscles of respiration it would be almost fatal to attempt a general anesthetic, because in this case the exchange of air can only be accomplished by the aid of the extraordinary muscles. A general anesthetic paralyses these extraordinary muscles of respiration, and, therefore, the burden of supplying air is thrown on the ordinary muscles of respiration, which are incapable of performing this function, and the patient necessarily dies of suffocation. The importance of recognizing these two factors in labored respiratory action, in view of the fact that one group of muscles is paralyzed by general anesthesia, cannot be over-estimated.

In the choice of local anesthesia cocaine is preferable to eucaine. The reasons for this preference are the following: Cocaine produces ischemia, while eucaine produces hyperemia. Inasmuch as hemorrhage, even slight, is of considerable significance in this operation, cocaine to that extent is preferable. The effect of cocaine is more prompt than that of eucaine, and, inasmuch as in this operation expedition is often urgently demanded, the operation may be more quickly performed under the more quickly-acting anesthetic, finally, the necessary dosage of ether, when properly used, is sufficient to endanger life. A one-tenth of one per cent. solution has been found of sufficient strength, in my experience, for inducing anesthesia. It might be well to point out here that after the skin incision has been made but few sensory nerve terminals will be encountered in the section through the subcutaneous tissue until the structures of the trachea or the larynx have been reached. It is necessary to pause here and inject a new line of the anesthetic. It is sometimes unnecessary to inject any anesthetic in the dissection between the skin and the surface of the respiratory tube. After making the incision into the respiratory tube it is advisable to apply cocaine or eucaine upon the mucosa by means of a swab or spray for a distance above and below the opening sufficient to protect the area of possible operative procedures.

It is especially important, if the larynx can be reached from the point of opening, to cocainize its interior. This having been done, sudden collapse and death are quite impossible. This statement may seem rather positive, but any one having seen the emphatic experimental results and having tried this technic clinically cannot say less. It matters not whether the operation is performed under general anesthesia or under local, this precaution should be taken inasmuch as it is true that, while general anesthesia protects the patient against pain, it does not prevent the reflex inhibition, so that cocainization serves precisely as important a purpose under general anesthesia as it does under local.

In the choice of general anesthetics the patient may be more quietly and readily reduced under chloroform than under ether, and the tendency to the secretion of mucus is less. In these respects chloroform is preferable to ether. In another very important respect ether is preferable to chloroform, namely, under chloroform anesthesia there is a decidedly greater tendency towards respiratory failure and reflex inhibitory phenomena than under ether anesthesia.

This observation on the comparative effect of chloroform and of ether is in full accord with work done by Gaskill and Shore, Leonard Hill and Waller, whose conclusions, based on a large number of experiments, show that chloroform exerts a much more toxic action upon the muscle-fibers of the heart than does ether, so that, in a given case of full chloroform anesthesia, it is probable that the heart muscle is more easily inhibited than under ether anesthesia, producing, as it does, less direct toxic action upon the heart muscle. On the whole, it would probably be best to reduce the patient to surgical anesthesia by means of chloroform, then continue with ether, unless ample precaution against collapse is made by local application of cocaine. Inasmuch as it is not the intention of this paper to deal with the general aspects of these questions, no comments will be made on other points in the technic or treatment.

It has been frequently observed that if the foreign body is not lodged high up in the respiratory tract it is likely to be found at the bifurcation or in one of the bronchi, most frequently the left. There is, it seems to me, an additional explanation for this fact aside from that usually made. It is readily demonstrable that the expiratory efforts of the respiratory apparatus are more powerful than the inspiratory. It is necessarily true that an inspiratory force exerted on

a foreign body cannot exceed that of the atmospheric pressure rushing from an area of higher pressure to that of a lower, that is to say, rushing into the chest during the formation of a partial vacuum therein. The expiratory force is limited only to the capacity of all the extraordinary muscles of respiration, which collectively include large groups of muscles, many of which are the strongest muscles of the body.

It has been shown by experimental physiologists that the expiratory groups of muscles are more powerful than the inspiratory. It follows, then, other things remaining the same, that a foreign body subjected to the play of these two factors acting in opposite directions, must find a lodgment toward the side of the one which is weakest. Now, when the foreign body has dropped down so low as to become engaged in one of the bronchial tubes, the force of the respiratory efforts is only partially applied to this lodgment of the foreign body because of the want of resistance in the free bronchial tube; while, if the foreign body were in the trachea, the entire force of the expiratory efforts would be directed against the foreign body, and so would likely drive it onward into the larynx. On purely theoretic grounds it would seem that if in a given case of lodgment of a foreign body in one bronchial tube, after a failure of respiratory efforts to dislodge it, the free bronchial tube were closed by an obturator quickly applied, so that the whole expiratory force might be brought to bear upon both bronchial tubes alike, thereby increasing to a great extent the expulsive force exerted upon the foreign body, such additional force might occasionally dislodge the foreign body that has resisted all other efforts. This, however, is a mere theoretic suggestion, not founded upon either direct experimental or clinical evidence.

In fixing the trachea with a hook, and, indeed, in any portion of the technic, it is of importance not to drag from above downward with too much force, else there may be produced an inhibitory effect upon the respiration, and, if the force be very severe, also upon the heart. This does not so much apply to traction from the lungs upward in line of the tracheal axis. Lifting the trachea out of its bed forcibly is objectionable for the same reason that dragging down too forcibly upon the trachea should be avoided.

SOME OF THE EUROPEAN SANATORIA FOR CONSUMPTIVES, AND THE FINAL AIMS OF PHTHISIOTHERAPY.[1]

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WHILE abroad last summer I had occasion to visit many of the German sanatoria, and some of the Swiss, and I shall limit myself to-night to describing some of the *ideas* that prevail there.

[1] Read before the Medical Association of The Greater City of New York, December 11, 1899.

Throughout Europe there is now being displayed an intense activity in the erection of sanatoria for consumptives, an activity heretofore unknown even there. This movement received a fresh impetus in Germany because of the Berlin Congress for Tuberculosis, held May 24-27, 1899, under the auspices of the Empress of Germany and some of the highest officials in that country.

Although it may not have been appropriate to discuss medical problems not at all settled by the profession in a lay society, as this Congress was, still two of the main leaders of that Congress, *viz.*, E. von Leyden and Bernhard Fränkel, deserve the greatest credit for stirring up the masses of the population to the recognition of the fact that something must be done for poor consumptives. How much can be achieved by the help of the laity has been shown in a small county of Westfalia, where, through the energy and perseverance of the "Landrath" Heydweiller, a sanatorium with one hundred beds has been built and is being managed and cared for by the county itself. Mr. Heydweiller, who, as I have said, is not a physician, kindly sent me his report on the sanatorium at Altena (Die Volksheilstätte des Kreises Altena. Paul Dalichow, Lüdenscheid), and I would recommend this booklet to every one interested in the question. He starts with the idea in view that it is the duty of the community, by erecting sanatoria, to care for consumptives in the same way as is done in general hospitals and other departments for the poor. Although his county consists of only 87,000 inhabitants, he succeeded in raising 400,000 marks, the greatest part of which was given by the community itself. When ninety beds are occupied, it is self-supporting.

There are but few other communities which have built sanatoria, as for example Berlin, at Malchow, with 96 beds, and Leipzig, with 60 beds. By far the majority, however, of these sanatoria have been built by private societies. The first one of these, in fact the first sanatorium for the poor, is that at Ruppertshain a. Taunus.

One cannot speak of the sanatoria in Germany without mentioning the oldest one, *viz.*, Brehmer's sanatorium at Görbersdorf. I personally knew Brehmer and can truly say that he deserves all the credit which he has been given, as they are his ideas which we have been following for the last twenty-five years or more. Görbersdorf is, indeed, the cradle of mountain spas, and of the hardening free-air treatment rationally combined with hydrotherapeutic and other measures.

Dr. Hermann Brehmer founded his sanatorium at Görbersdorf in 1854. After his death, in 1889, there were several capable men at the head of the institution, Professor Kobert, Dr. Felix Wolff and others; but they all left and a rumor spread last summer that there was no physician-in-chief in charge of the sanatorium. Therefore I did not visit it at all. I hear that Dr. Schlössing at present occupies that position.

In 1875 Dr. Römpler opened a sanatorium at

Görbersdorf, which still enjoys a good reputation.

One of Brehmer's former patients and assistants, and now the leading man in phthisiotherapy in Germany, is Dettweiler. A Frankfort society started for him in 1874 the well-known sanatorium of Falkenstein a. Taunus. Dettweiler is still connected with this institution as consultant. As he is the most prominent man since the death of Dr. Brehmer, and has many pupils even in the United States, I shall deal with his sanatorium at length. I shall omit describing the institutions and surroundings, as this has been done often enough, as for example by Dr. Knopf.[1]

As you all know, Dettweiler lays the greatest stress on the rest cure in the open air, and he has halls and pavilions built with comfortable chairs in them so that the patients may lie in them for hours every day. There are several small halls which can be turned like carousals, according to the direction of the wind, and here also are comfortable chairs, or rather sofas, for each patient. Such "*liegehallen*" (reclining halls) are now to be found in almost every sanatorium in Germany.

It is claimed that this open air rest cure brings the patient more in contact with the open air, gets him hardened and accustomed to fresh air so that he is enabled to lie outdoors for hours, even in cold weather, covered with blankets and furs, thus being hardened against catching cold and the inclemencies of the weather.

Brehmer, on the contrary, did not consider it correct to have the patient breathe the fresh air in reclining halls built for that purpose. He believed rather that it was much more to their advantage to lie temporarily in their rooms with open windows, or on the balconies adjoining them, because, critically considered, a reclining hall is nothing but a common room, overcrowded with patients, from which the fourth wall is missing. I never saw the truth of this statement so strikingly verified as at Ruppertshain, which is very near Falkenstein and erected by the same Frankfort society, but for the poor only. While at Falkenstein the patients were seen lying on their chairs in different parts of the park, at Ruppertshain all had to lie in the common hall packed together as closely as possible; in fact, when I entered that hall the air was really bad. It was noticeable to the sense of smell and surely not to be inhaled by invalids. If anything, this hall, sanctioned by many of the most modern scientists, reminded me of an idealized New York sweatshop. It is just this crowding which we have to avoid in order to get good air for the patient.

And now, imagine such a hall upon a warm summer's day, protected against every little breeze, filled with patients who have to lie for hours on their chairs, and you will have the same impression that I had, *vis.*, that this was not the correct treatment for consumptives.

But, aside from the bad air, there is another factor that speaks against these halls, *i.e.*, the inactivity of the patient. There can be no doubt that for some people, who in their struggle for life have overworked themselves and overtaxed their physical strength, a rest cure of a few weeks' duration can only be beneficial. Further the rest cure has decided attraction and charm, as Dr. Felix Wolff correctly remarks, when the patient takes it as a pleasant change after having performed all the exercises prescribed for him. But for the great mass of people who do not exercise, this cure is absolutely injurious. Here I am always reminded of Weir Mitchell's rest cure. This has done good in a great many cases; but to my conviction it has done harm in a great many more, *vis.*, when exhibited in an unsuitable condition. It is the same with consumptives.

Now, we must not forget that the less muscular work one does the less albumin is lost from the system; conversely, the more work done, the more albumin lost. We know that this is most marked in climbing, less in walking, still less in sitting, and least of all in lying. When, therefore, we have a patient suffering from consumption, we should conclude, according to Professor Cornet,[1] that all movements of the muscles should be limited to the least possible degree. Besides, through the toxines, the heart is also affected and by increased labor it might more readily give out. This is all very true, but by rational work in the open air, of which I shall speak later on, the appetite is increased largely and a tonic effect produced which is beneficial to all the functions of the human system. We lose albumin, but we gain more by the increase of nourishment which the patient takes. That overstraining of the heart is of detrimental effect, has been seen often enough, and only lately Turban reported a case of a man, fifty-four years of age, who, contrary to orders, took part in a skating race on the ice until he was exhausted. Myocarditis was the consequence. But such accidents can easily be prevented if we go to work in a rational manner.

The tuberculous patient needs, as is well recognized, a change in his whole mode of living. He acquired the disease by his occupation, and he must, therefore, change his habits entirely. Take for example a bookkeeper or a tailor, who has been sitting all the year round and doing his one-sided muscular work, and let him sit in a chair again and you will only make him worse. Such people need general exercise for their muscles, and the more systematic it can be given to them, the better for them. A letter-carrier having acquired consumption would not be advised to walk all day. He might need a rest, and I would surely give him other gymnastic exercises than walking, unless that were specially indicated.

An entire change of the patient's occupation is an absolute necessity for the success of the treatment, nor can this fact be stated too frequently, nor emphasized too strongly. Only this will give him the stimulus for his nutrition, thus improving his whole organism and enhancing his diminished vitality. It is because of this that we can not insist that all patients must have a rest cure,

[1] S. A. Knopf, Pulmonary Tuberculosis, Philadelphia: 1899.

[1] Professor Cornet, Die Tuberkulose, Wien, 1899.

or all patients must climb hills; no, this patient does this work, and that patient does just the contrary, both according to their previous habits of life, and they will both get well.

There is another point that has not been brought out so far as I know in this connection, *viz.*, the trophoneurotic condition of the consumptive. I am of the opinion, which already has been ventilated by Nauss, Strebel of Munich and others, that consumption in the first instance is a trophoneurotic affection of a general and local nature. It is only later that an invasion of the tubercle bacilli takes place. Nauss believes that the seat of this neurotic affection lies in the medulla oblongata with special implication of the vagus nuclei. Thomas J. Mays [1] of Philadelphia is convinced that phthisis is alone due to an affection of the vagi. He goes so far as to inject 7 minims of a 2½ per cent. solution of pure silver nitrate over the course of these nerves. I have not risked doing that as yet, especially because I am not convinced of the correctness of Dr. May's theories. As Strebel [2] says, only the trophic fibers are affected, while the pulmonary branches of the vagus carry motor, sensory and centripetal and centrifugal vasomotor fibers also. Strebel does not believe, and I agree with him there, that the trophic fibers of the vagus alone are affected, but that the nerve takes part in the general trophic insufficiency of the consumptive; that secondarily, perhaps, degenerations in the vagus and medulla may be seen is very plausible, but the conclusions on this question are as yet not decisive. The causes for this general trophoneurotic affection are manifold, but this is not the place to discuss them; yet it is certain that such an insufficiency exists.

I was reminded of this fact only a few weeks ago when Dr. Wm. H. Thomson, in the discussion on the initial symptoms of phthisis, described in an excellent manner the emaciation due to consumption and its differential diagnosis from other forms of emaciation. I can give here only a few of Dr. Thomson's symptoms, *viz.*: The bones are flattened in a certain way and thin; the muscles elongated and flabby; the chin is markedly protruding when the patient is seen sideways, etc. If to this general trophic paresis is added the local affection, then the soil is prepared for the specific infection with tuberculosis and a general infection soon takes place. Now, we ought to try to overcome this trophoneurosis from the very start. A change of surroundings, different and better nourishment and the open air rest cure will surely help many patients, but not the majority. A trophoneurotic patient must not only be well nourished and have plenty of fresh air, but he must be occupied as well. This enforced rest for hours every day is apt to make anybody nervous, besides having other detrimental factors. For example, to have a young man lie on a verandah for days and weeks next to a young woman can surely not have a quieting effect on the nerves. This is what the owner of one of the best private sanatoria in Switzerland told me himself, and he is a believer in the rest cure. There are more reasons which could be mentioned against the long-continued rest, which I will, however, refrain from discussing.

Now to overcome all this, we must give the patient some occupation. Here lies the difficulty. But since this has been overcome in another branch of medicine—neurology—we can overcome it here also. It was a long time before neurologists recognized the great value of systematic occupation for their patients. I need only remind you here of Möbius, Wildermuth and others. The principal fighter in this field is a layman, Mr. A. Grohmann of Zürich,[1] who has published an ingenious little book on the technic and psychology in the occupation of nervous patients. He started an institution for this purpose at Zürich, with the help of Professor Forel, and deserves the greatest credit for his unfailing energy.

The way he defines the influence on the patient of work and of having accomplished something, the good and bad influence of one patient on the other, all this ought to be read in his book and can be applied to a certain degree to our phthisical patients, too.

As the main occupation he recommends agricultural work, then gardening, carpentering, and a few more. We could, somebody might say, achieve all this by rational gymnastics, but the difference in the influence between the two on the mind of the patient is as day is to night. When the patient knows that he has to plant flowers to-day, and to-morrow he has to shovel snow, he feels that his life is not worthless. When he sees the flowers blossom which he himself has planted, he experiences a satisfaction and pride that is better than any medicine we can give him. Therefore I wish to emphasize my conviction that instead of the rest cure, *I am in favor of a working cure*. Let the patient work and feel happy; that is the first step towards improvement.

I am aware how difficult this task is but I feel confident it can be done and it must be done. I know many institutions here and abroad where the patients do not know what to do to prevent ennui. One fixes general rules; take a walk; eat a little bit more, do this and do that occasionaliy, etc. While this is advised by many physicians, the tendency of the modern view is in a different direction, *viz.*, to keep the patient busy. One of the pioneers in this respect is Dr. Turban,[2] at Davos (Switzerland). He has made it a rule to instruct the patient that he has to get up at a certain time, has to take the rest cure at such an hour, has to walk at a certain time and so on. In this way he frees the patient of his *bête noire*—the lack of something to do and his helplessness—and the consequence is, as Dr. Turban told me

[1] Thomas J. Mays; "The Hypodermic Injection of Silver Nitrate," etc. Boston Medical and Surgical Journal, Vol. 140, No. 6, 1899.

[2] H. Strebel; "Die Tuberkulose und ihre Beziehungen zum Licht," Archiv für Lichttherapie, p. 41, etc., November, 1899.

[1] A. Grohmann; Technisches und Psychologisches in der Beschäftigung von Nervenkranken. Stuttgart, 1899.

[2] K. Turban. Beiträge zur Kenntniss der Lungen-Tuberkulose, Wiesbaden, 1899.

personally, that he who does not come to the institution a neurasthenic will certainly not become one there. He has laid down his views in his book, which shows great practical experience and knowledge. This plan is also carried out by others similarly to the method employed in Dr. Turban's sanatorium. Although this is to be regarded as a great step in advance, I must repeat that it is still not quite the correct thing to do, for even here the patient sleeps nine hours, takes his rest cure for seven hours more, which makes sixteen hours out of the twenty-four, and the remainder of the day is divided between taking his several meals, etc. The days and the weeks may pass by quickly in this way, but a great deal of time is lost which could have been used for strengthening the heart and improving the trophoneurotic condition of the patient.

The following are the rules for the day laid down by Dr. Turban for an incipient case: 7 A.M., rising; 7:30 A.M., first breakfast, milk, coffee, bread, butter, honey; 8 A.M. douche; 8:15-9:15 A.M., mountain climbing with intervals of resting; 9:45-10:30 A.M., rest cure; 10:30-11 A.M., second breakfast, 1/2 liter of milk and bread and butter; 11-12 A.M., walking on a level, with resting; 12-1 P.M., rest cure; 1-2 P.M., dinner, soup, fish, meat and vegetables, roast with salad or compot, dessert, 1/4-1/2 bottle of wine; 2-2:30 P.M., standing and sitting in the open air; 2:30-4 P.M., rest cure; 4-4:30 P.M., 1 cup of milk coffee, 1/4 liter milk with rolls; 4-30-6 P.M., walking on a level; 6-7 P.M., rest cure; 7-7:45 P.M., supper, consisting of soup, warm meat with vegetables, cold meat with butter, compot and 1/2 bottle of beer; 8-9:30 P.M., rest cure; 10 P.M., retiring.

In cold or bad weather when sitting in the open air is impossible, the time for walking is shortened and accordingly the time for repose lengthened. For patients with fever, etc., the system is changed, and especially the rest cure prolonged. Naturally all these rules are subject to modifications to meet the requirements of special cases, and it was Turban, if I am not mistaken, who first introduced this exact division of the day for each individual.

Dr. Lucius Spengler, also at Davos, gives the following rules for a strong patient without fever: 6:30 A.M., a glass of milk; 7-7:30 A.M., rising; 7:30-8 A.M., breakfast; 8-9 A.M., walking; 9-11 A.M., reclining; 11-11:30 A.M., walking; 11:30 A.M.-12:30 P.M., reclining; 12:30-1:30 P.M., dinner; 1:30-2 P.M., sitting or walking; 2-4 P.M., reclining; 4-4:30 P.M., a glass of milk; 4:30-5-30 P.M., walking; 5:30-6:30 P.M., reclining, correspondence, etc.; 6:30-7:30 P.M., supper; 7:30-8 P.M., walking; 8-9 P.M., reclining; 10 P.M., retiring.

Of course these rules also are changed according to the condition of the patient. But we see from the tables how little work the patients are allowed to do, and I must say that to rest for about seven hours a day—sitting is resting, too—and sleep in bed for nine or ten hours in addition is, to my idea, contraindicated for incipient phthisis, and the majority of these sanatoria admit only incipient cases.

Now, if we have to keep the patient occupied, the question arises, in what way? I have mentioned Mr. Grohmann's ideas regarding agriculture, gardening, etc. Nobody will doubt that this is feasible for well-to-do patients. They can buy all the implements and can obtain all the assistance and supervision necessary for such undertaking; but how about the poor? They, too, can be kept busy in many ways which are hygienic. But I go further; not only do I want them to exercise their muscles and strengthen their hearts—that alone is not sufficient—I want them to get some pecuniary return, even if this be but a trifle. In this way they should first help support the sanatorium that harbors them, and, secondly, after their discharge be able to support themselves and their families.

Take, for example, a working-man who makes a very nice living for himself and family. He falls sick, goes to his lodge doctor and is advised to stop working and be out in the open air as much as possible. He has incipient phthisis. The doctor reports him sick, and the brethren from the lodge pay him a visit. They find him enjoying a walk in the park and not looking at all sickly. "Why," they say, "we cannot pay for such a man. He is stronger than we are and ought to work." And back he goes to his cigar factory and works until more serious symptoms arise. Then his brethren believe him to be sick.

Most lodges pay a sick benefit of five dollars or six dollars a week for thirteen weeks the first year; after that the sick member has to rely on his own resources, and the consequence is that after everything of any value has been pawned, this poor man is made a pauper, and is happy when he is admitted to some general hospital to die there, a burden to the community, to himself and his family.

There are several ways to remedy this evil. We must build sanatoria in this vicinity. This surely is to be desired and I truly hope that we shall soon get them. But supposing we have one, or five, or ten sanatoria for consumptives, what does this mean in comparison to the great mass of consumptives we have year in and year out? These sanatoria will hardly be in position to house more than a small proportion of those so afflicted. The great mass will have to go about as before. Now I hold that if the State does not assist us, we ought to help ourselves, and therefore, I propose the following plan:

Take the great many lodges, that give a sick and death benefit. They pay from four dollars to six dollars per week for thirteen weeks, and if the patient dies they pay $500 or even $1000. Would it not be much better for the lodge, as well as for the patient, to give him, say $300 at once and be done with it? With this $300 the man could go to a mild climate, he could commence to work in the open air, and in many cases could survive his disease and make a living.

I think that if a number of these lodges would combine and buy land in the West—where it can be obtained for a very small sum—with the help and supervision of some physicians, these patients would be able to raise material, such, for instance, as the hay that grows in that section called "alfalfa." When a crop of this alfalfa is once started it can be easily reaped four or five times every year. Besides this, there are numerous ways by which these invalids can occupy themselves in a satisfactory manner both hygienically and pecuniarily. There are many reasons which speak in favor of such a plan. (1) The patients would live in a mild climate and enjoy the open air all day long and during a great part of the year also all night; (2) they would have the sun during almost the whole year, and (3) they would be occupied in a manner that is conducive to their health and their material welfare.

The Southwest offers the best chances for such an undertaking; but even in our vicinity, *viz.*, the States of New York, Connecticut, Massachusetts, etc., such institutes could be established and carried on for the benefit of thousands of patients. As each tuberculous patient forms a center of infection, we ought to try to remove them from the city as soon as possible, and if we help them to get on their feet, even in a distant State, we do more charity than if we support all the hospitals in New York.

In conclusion I wish to urge the following points:

(1) All patients with incipient phthisis must be occupied in some rational muscular work. These patients are directed to walk or even climb hills and mountains; they can just as well do some work which will keep them busy. This work should be selected with a view to the financial state of the patient. (*a*) The well-to-do people can do gardening, snow shoveling, light carpentering work, *etc.* (*b*) The poorer ones ought to do, or learn how to do, some work which they can utilize afterward for their own support. Agricultural work, light farming or the others mentioned above would be suitable. (*c*) Every sanatorium should be provided with facilities to teach this as far as possible. (*d*) All this work should go under the supervision of physicians.

(2) Sanatoria for the rich and for the poor should be under one finanical management, although not necessarily in one and the same place, so that the surplus of one institution can help to support the other. This surplus could be obtained partly from the manual labor of the patients themselves.

(3) A society should be formed, if possible, by the people who are mostly affected by it, *viz.*, the lodges, in order to send the patients to a milder climate where they can work constantly in the open air, as, for example, certain parts of Arizona and New Mexico where it is easier for them to make a living in a hygienic way than in the overcrowded eastern States.

It has been stated that an advance in our knowledge of phthisis is shown by the fact that patients can get better in any part of the world, and that they should stay near their homes. Although I am convinced that for many patients a mild mountainous climate is the best, I shall not discuss that question here. I will only ask whether it is not better to send a man away to some western or other climate where he can find a healthy occupation than to let him stay in, or return to New York where he finds no work at all, or has to go back to his sweat-shop and die there.

CLINICAL MEMORANDUM.

A CLINICAL CONTRIBUTION TO THYROID THERAPY.

BY CHARLES E. HIRSH, M.D.,
OF NEW YORK.

ALTHOUGH not quite ten years have elapsed since the introduction of the thyroid gland as a therapeutic agent this treatment has been utilized in a large variety of diseases. As is usually the case with any new remedy whose status has not yet been established, it has been tried in diseases in which *a priori* it could not be expected to give successful results. It would seem rational to conclude that the greatest triumphs of thyroid therapy would be achieved in maladies dependent upon the absence of the thyroid gland or impairment of its function, such as myxedema, cretinism, and some forms of goiter. While this has proved true to a certain extent, clinical experience has demonstrated that thyroid feeding is of value in affections in which no abnormality of the thyroid gland seems to exist, such as various mental affections, certain diseases of the skin, fibroid tumors of the uterus, etc. So little is known, however, concerning the physiology of the gland that its *rationale* of action in these cases cannot be explained, although it appears probable that there is some anomaly of function of the gland in such patients, which is removed by its administration.

The conflicting testimony of authors as to the value of thyroid treatment is evidently due in large measure to the preparation employed. Some clinicians still prefer the administration of the raw thyroid; but for obvious reasons this is impracticable in the majority of instances. The numerous preparations of desiccated thyroid in the market differ greatly as regards their strength in active ingredients. It is now widely accepted that the active substance of the thyroid gland is iodothyrine which was discovered through the brilliant researches of the late Professor Baumann. This investigator found that the quantity of iodothyrine in the thyroid taken from different sheep varied within wide limits. For this reason there can be no uniformity in the various thyroid extracts, since some contain greater and others smaller quantities of active ingredient. This also explains why the effects obtained by different observers have varied so greatly. There is a further disadvantage attending the use of these thyroid products which is connected with their mode of

preparation. They all contain in combination with the active constituent a large amount of albuminous material which is liable to undergo putrefactive processes. According to a number of authorities the unpleasant and injurious effects experienced during the administration of thyroid extracts are attributable to the ptomaines generated through the decomposition of this otherwise inert albuminous material. Iodothyrine is, therefore, to be given the preference over the crude extracts in the market. As shown by the researches of Professor Chittenden and others, it is a body of definite chemical composition which embodies the physiological properties of the thyroid gland. In a paper read before the American Congress of Physicians in 1897 this author stated that in its action on goiter, iodothyrine is more effective than the gland itself, since when the gland is taken it must first undergo digestion to liberate the iodothyrine, and some may be lost by putrefactive changes in the intestine. In a recent article on the treatment of myxedema, Professor Sidney Kuh of Chicago (*Philadelphia Medical Journal*) also states that "with iodothyrine the disagreeable secondary effects were decidedly less marked than when the compressed thyroid were used, a peculiarity which has been observed by others as well as by myself in several instances."

In an article published in the *Medical Times and Register*, March 6, 1897, I reported my preliminary experiences with iodothyrine, and since then my results have been so favorable that I am led to contribute my further observations. The first case which I desire to bring to your notice is one of exophthalmic goiter. I am well aware that the results of thyroid treatment in this disease have been far from satisfactory. In fact, in certain cases, thyroid feeding intensifies the various disorders, and is postively contraindicated. Dr. E. Jeulain, however, last year contributed an essay on an affection designated by him as thyroid chlorosis, which not only represents the symptoms of ordinary chlorosis, but also those of exophthalmic goiter, such as palpitation of the heart, protrusion of the eyes, and an enlargement of the thyroid gland. In connection with these phenomena there were also symptoms of myxedema, such as lassitude and edema. That this peculiar condition was of thyroid origin was well demonstrated by the results of treatment. In the eight cases reported by the author the administration of iodothyrine produced a remarkably rapid and decided improvement. The number of red globules, and the percentage of hemoglobin were greatly increased, the size of the thyroid gland diminished, the tachycardia and the nervous symptoms relieved, and the edema disappeared. As an explanation of the gratifying success obtained from the use of iodothyrine in the case of exophthalmic goiter described below, Jeulain's observations are of much interest.

Case I.—Miss L. J., age nineteen, applied to me for treatment on April 12, 1898. The mother, who accompanied her, stated that her daughter was suffering from heart trouble and nervousness. The patient appeared fairly well nourished, weighing 127 pounds, her height being 5 feet, 4 inches. Her pulse was 110. On examining her more closely I found an enlargement of the thyroid gland and marked exophthalmos, as well as tremor of the flexor and extensor muscles of the wrist. These symptoms, she said, had been present for six months without amelioration, although she had consulted several physicians. To quote the patient's own words: "I got worse and decided to stop doctoring until I stared so and felt so wretched that I was ashamed and afraid to go out into the street." A friend advised her to go to a dispensary; but after going there twice she refused to return. She had used tincture of iodin for the goiter until the skin had peeled off and the surface was abraded. I elicited the following facts from the mother in regard to family history: Parents living; father's age, fifty-nine; mother fifty-four; both in good health; a sister twenty-three years old was also healthy. A brother who died in Honduras six years before also had the same symptoms of which the patient complained—a large tumor on his throat (goiter); the mother stated, however, that he died of asthma. I am inclined to believe his death was due to asphyxia, since dyspnea is a characterized feature of exophthalmic goiter, and as I learned he had several attacks previous. This trouble had been present for four years previous to his death. The patient had not been under treatment for the past two months. Her appetite was poor; her memory had been gradually failing, and she was inclined to be irritable and became exhausted from the slightest cause. I prescribed liquor potassi arsenitis, 3 drops, t.i.d., and also ung. hydrarg, iod. rubr., to be rubbed into the enlarged gland. As no perceptible change occurred under this treatment the arsenic was discontinued, and on April 29 I resorted to the use of iodothyrine, 5 grains, t.i.d., telling her to call in a week. May 6, the patient was feeling greatly improved, but the ointment was discontinued as the rubbing proved too painful. The gland was found to be slightly reduced in size. The dose of iodothyrine was now increased to 7 grains, t.i.d. May 14, the exophthalmos was not as prominent; the goiter was diminished in size, but her heart still annoyed her, the pulse being 106. Digitalis was given in 5 drop doses, t.i.d., and the iodothyrine continued as above. May 19 improvement was progressive; the patient had vomited after taking the last dose of digitalis, but otherwise felt better. The same observation was made on May 27. June 8, the digitalis was discontinued, and the iodothyrine increased to 10 grains. t.i.d. There was still tremor in the flexor muscles; general appearance and appetite better; pulse regular. June 12, increase of dose of iodothyrine to 15 grains, t.i.d., as patient continued to improve. June 15, she suffered from slight nausea and diarrhea. Her weight at this time was 123 pounds, and I told her to stop iodothyrine for a week, as I attributed the nausea and

diarrhea to the increase of dosage. June 23, patient was much better in every way; the iodothyrine was resumed in doses of 5 grains, t.i.d. June 28, the exophthalmos was hardly noticeable, the gland being no longer prominent; the pulse was 100. The treatment was discontinued. July 6, improvement persisted. July 15, the dose of iodothyrine was reduced to 3 grains, as the symptoms were gradually disappearing, and as I desired to determine the minimum dose. July 23, improvement was remarkable, and the treatment was suspended for two weeks, and resumed on August 7, iodothyrine being given in doses of 3 grains, t.i.d. The patient was greatly delighted over her rapid improvement. August 18, the exophthalmos as well as the goiter was no longer perceptible. Her pulse was 92; appetite good, bowels regular. As she complained of some lassitude, however, iodothyrine was suspended for one week, and quinine muriate, t.i.d., given as a tonic. August 27, the patient stated that she felt as well as she did five years ago. In fact, all the symptoms of the exophthalmic goiter had disappeared, the pulse being 88; iodothyrine was continued in same doses. September 19, patient felt well, but had lost 16 pounds since the beginning of the treatment. The remedy was continued, a tonic also being prescribed. October 13, the recovery was found to be complete, and I stopped the iodothyrine. I did not see the patient again until February 7, 1899, when she called at my office. There had been no recurrence of any of the symptoms. April 12, the patient again came under observation, and was also seen July 16 and August 24, and her recovery had remained permanent. In this case iodothyrine was certainly given an impartial trial, and I would ascribe my success to its judicious use.

In my former article I reported several cases of obesity in which a considerable reduction in weight was brought about by the administration of iodothyrine, and since then a number of reports have appeared on this subject. Among these I would particularly mention an article by M. Weiss (*Wien. med. Wochenschrift,* No. 41, 1898) in which he concludes that the favorable effect of iodothyrine in these cases is due to the increased oxidation of the fats, and augmented secretion of urine, without impairment of the nitrogenous metabolism. In one of the cases reported there was a marked cardiac lesion, but notwithstanding this no unfavorable effects were experienced. Dr. H. C. Wood, Jr., in a recent article on the thyroid gland in obesity (*Merck's Archives,* July, 1899) remarks: "It is a well established fact that the thyroid gland is often able, even without any other treatment, to reduce the weight of either corpulent or normal individuals." While he thinks it probable that "there is under the influence of the thyroid gland an increase in the nitrogenous katabolism, not the whole nor even the greater part of the loss of weight can be accounted for in this manner." As will be noted in the following cases, there was an increase of weight after the discontinuance of the treatment, but this was not marked, and cannot be considered as an objection. As Dr. Wood justly remarks, "A moment's thought will show that this is only to be expected, for we are not treating the underlying cause, but merely the symptom of obesity. If, after we have by careful dieting and regular exercise rid a patient of his excess of fat, he returns to his previous habits of overindulgence and physical sloth, of course, he will also return to his previous bodily state. If we wish our treatment of obesity either by the thyroid or diet to be permanent we must insist upon a continuance of abstemious habits, a point on which the originator of the thyroid gland method, Yorke-Davies, lays especial stress." As regards the dosage, Dr. Wood recommends at the beginning from 7 to 15 grains of the fresh gland daily, but says that the dose may be carefully increased if necessary. As will be seen in my cases, I employed doses greatly exceeding these without the least unpleasant after-effects. This is but another proof of the greater safety of iodothyrine over other thyroid preparations.

Case II.—Mrs. A. R., aged forty-three, weight 231 pounds, height 5 feet, 3 inches, consulted me on March 3, 1898. She was the mother of four children; her previous health had been good, but lately her appetite had become poor and the bowels constipated. She could walk only a short distance without becoming exhausted, and was steadily gaining in weight. She had tried various obesity pills, salts, and antifats, but all to no purpose, as they failed to produce the slightest effect. I prescribed iodothyrine, 15 grains, t.i.d., and also extract of cascara sagrada, 15 drops, morning and night. March 9, her weight was 239 pounds; March 16, 228; March 25, 221; April 3, 220. April 11, she felt nauseated, and hence the dose of iodothyrine was reduced to 10 grains. As the bowels were regular the cascara sagrada was discontinued; her weight at that time was 217 pounds. I informed her that to reduce her weight so rapidly without exercise would be dangerous, as she had lost 14 pounds in about five and one-half weeks. In April 18 her weight was 212 pounds; April 26, 210; May 3, 209; May 11, 207 1/2; May 19, 204; May 28, 201. She was ordered to discontinue the iodothyrine for two weeks. June 11 treatment was resumed; her weight up to that time being 202 1/2 pounds. On June 18 it had fallen to 198 pounds, a total loss of 33 pounds in less than 12 weeks of actual treatment. I told her that she had reduced sufficiently, and ordered her to stop all treatment. On August 7 she called again and told me that she had taken plenty of exercise, and had not gained a pound in weight. She was weighed on the same scale, and wore a light wrapper each time. She had experienced no discomfort, except slight nausea on April 11.

Case III.—Miss Mary B., age thirty-five, height 5 feet, 4 1/2 inches, weight 214 pounds, came under treatment March 15, 1899. For the past three years she had been steadily gaining in weight, although in perfect health; the appetite

was fair and the bowels regular. Iodothyrine was administered in 10 grain doses, t.i.d. March 21 there was no change in weight. March 29, weight 211 pounds; April 6, 210; April 15, 207; April 23, 204; April 30, 202; May 9, 196. At this time she had slight diarrhea, for which I prescribed mist. cretæ and salol. May 12, as diarrhea continued iodothyrine was stopped and hydrarg. chlorid. mite., 3 grains, given, followed by mist. cretæ. May 15, the diarrhea had ceased, and iodothyrine was resumed in doses of 3 grains, t.i.d. May 22, weight 189 pounds; May 30, 187; June 6, 187. The dose of iodothyrine was increased to 5 grains. June 14, weight 184 1/2 pounds; June 24, 182. Treatment was now discontinued for two weeks. July 10 the patient desired to resume treatment. July 10 the patient given in 3 grain doses, but as I was very busy I omitted to ascertain her weight on that date. July 17, weight 176 pounds; July 26, 174. I advised her to discontinue the treatment, as I thought she had reduced enough, and her health was perfect. August 16 she called at my request; her weight was then 176 pounds; September 26, 175; October 20, 175. As can be readily seen in this case the treatment has been most successful, as I was able to readily control any increase of weight, and effect a reduction of thirty-nine pounds in four months of actual treatment.

Case IV.—Mr. S. O., age thirty-seven, married, electrician, consulted me May 12, 1899; his weight was 248 pounds, height 5 feet 7 inches. He complained of difficulty in breathing, and can not follow his business with any comfort. He had tried riding a bicycle, and also gymnastics and walking, but without any benefit. His heart was normal, and he experienced discomfort only when ascending and descending the stairs. I prescribed iodothyrine 15 grains, t.i.d. May 18 his weight was 247 pounds; May 25, 240; May 30, 241, a gain of one pound. I increased the dose to 20 grains, t.i.d. June 11 his weight was 236 pounds, but I advised him to stop the treatment for two weeks. July 24, weight 229 pounds; iodothyrine was resumed in doses of 20 grains, t.i.d. August 6, weight 217 pounds; August 23, 211; August 25, patient had a headache and slight diarrhea, and, therefore, the use of iodothyrine was suspended, but was resumed September 5 in doses of 15 grains. His weight at that time was 209 pounds; September 19, 207; September 29, 201; September 30, treatment was discontinued, as the patient had a recurrence of the diarrhea, his weight then being 200 pounds. October 15 his weight was 202 pounds, and the administration of iodothyrine, 15 grains, t.i.d., was resumed. October 26 his weight was 197 1/2 pounds; October 30, 194. The treatment was stopped, although the patient was willing to continue it. He has since reported every week, and has gained two pounds in three weeks, a loss of fifty-four pounds in about five months of actual treatment. The treatment was continued long enough, however, to demonstrate its specific influence without any harmful results.

MEDICAL PROGRESS.

American Folk-Medicine.—In a recent communication R. H. True (*Pharm. Review*, Feb., 1900) cites a few interesting notes on folk-lore medicine of the United States. Some of these empiricisms are as follows: "Swallowing a live head-louse, without the knowledge of the patient, will cure the jaundice." "Biting into a live black snake will insure sound teeth for the one who bites it" is a generally spread superstition. "A sty may be cured by rubbing it with a black cat's tail" comes from Alabama. A unique prescription is current in Rhode Island, thus: "If you have asthma, save all of the nail-parings of your hands and feet for a year. At the end of that time find an ash-tree of the same age as yourself, bore a hole in it, put in the parings and plug up the hole." The following cures for toothache are given: "To bite into a living black-snake will cure the toothache," and "picking the teeth with a splinter from a tree struck by lightning will prevent toothache." The old German folk-lore belief that "thoroughwort" will act as an emetic or as a cathartic, according to whether the plant is brewed with the "blows up or blows down," is closely matched by the Ohio tradition that tea made from elder bark removed by scraping upward will act as an emetic, whereas if the bark be scraped downward the tea will have cathartic properties.

Day-terrors in Children.—The occurrence of day-terrors in children has received but little attention. Much has been written of night-terrors, as they are common, but English writers, at least, have given but little attention to the much less common attacks which occur during the waking moments. G. F. Still (*Lancet*, Feb. 3, 1900) reports five cases of this interesting condition, all in children under the age of six years. In most of the cases, the child without warning begins to scream, has a terrified look and runs to his mother or attendant, hiding his face in the folds of her garment, and gives every evidence of suffering from great fear. Hallucinations and delusions seem to be absent. In literature cases are reported which have occurred in older children. In some of these distinct evidences of visual and auditory hallucinations were obtainable. The relation to night-terrors is probably very close. In four of the cases reported night-terrors were, or had been, present, and it would seem that the day attacks may be associated with them or replace them; but the two conditions are probably very different in etiology, although the etiology of night-terrors is far from being known. A nervous, excitable temperament is nearly always a factor in the etiology. Rheumatism, either in the child or in the parents, may play some rôle. In most of these children minor functional neuroses are evident. Habit spasms, nocturnal enuresis, recurring headaches, nervous diarrhea are frequent with them. In a large number valvular disease is present. Some observers have claimed

that night-terrors, and more particularly, day-terrors, are epileptic in their nature, and that the condition is to be considered as a form of *petit-mal*. This is not the view held by the author. He believes that, inasmuch as these patients do not show any tendency to attacks of major epilepsy and, furthermore, are so readily relieved of their symptoms by appropriate treatment, that the relation to epilepsy must be but very slight, if any relationship at all exists. In some cases there seems but a very narrow line existing between day-terrors and some forms of insanity. The author's summary of impressions, for thus far in the study of this affection it is only possible to have impressions, is that it is a paroxysmal psychoneurosis allied to, but not identical with, epilepsy on the one hand and hysteria and insanity on the other. The prognosis is good. The most important part of treatment is the removal of any exciting cause. Since a chronic intestinal catarrh is apt to be present, it should be relieved. Potatoes, pastry and the sugars are to be excluded from the diet. Thread-worms or other intestinal parasite must be removed. Potassium citrate and the bromides are useful and a regular mode of life with healthful distractions and non-exciting sports will usually aid materially in the treatment.

Submucous Fibroid: Uterine Section.—J. Braithwaite (*Brit. Med. Jour.*, Feb. 3, 1900) successfully removed a large submucous fibroid at the fundus by doing practically a Cesarian section. After opening the abdomen an elastic ligature was passed about the cervix, and section of the uterine wall made down to the fibroid, which was easily removed. The cavity of the uterus was opened so a drain was passed through the cervix after removal of the ligature. The wound was closed as in Cesarian section, and primary union resulted.

Renal Papillectomy.—E. H. Fenwick (*Brit. Med. Jour.*, Feb. 3, 1900) has been studying painless unilateral renal hematuria in young adults for years to get at its etiology. Kidneys which have been bleeding freely and persistently show no lesion on the post-mortem table nor under the microscope. In a number of cases he has incised the kidney through the cortex, inserted his finger and discovered nothing abnormal, yet the bleedings ceased. He believes the failure to discover the cause of hemorrhage must be due to faulty technic. In his last two cases, he has opened the renal pelvis, inserted an electric light, and in each case has been rewarded by finding one papilla markedly congested, somewhat swollen, and bleeding freely. This papilla was removed and the wound closed. Hematuria never recurred. Examination of the specimen, which resembled a vellous growth, showed it to consist of markedly varicose, congested veins, with extravasation of blood and an increase in cellular stroma. This condition cannot be made out by finger exploration.

Improved Suture for Fractured Patella.—R. G. Pattison (*Brit. Med. Jour.*, Feb. 3, 1900) thinks the causes of bad results in suturing fractured patellæ are as follows: (1) The adoption of a subcutaneous method in which no effort is made to relieve the tension in the joint due to extravasation of blood and serum and in which, therefore, the bony surfaces cannot be accurately apposed. (2) The use of unsuitable sutures and a faulty technic, leading to joint infection, or the cutting out of the sutures, and consequent loss of apposition. His method is to make a U-shaped incision, crossing the patella ligament well below the lower fragment. The periosteum is reflected from the front of each fragment and the joint cavity washed free of clots by sterile water. A hole is drilled obliquely, so as not to pass through the posterior surface, through each fragment in the median line. A specially designed semi-cylindrical, soft silver wire is then passed through, so that the broad, flattened surface, which is least apt to "cut through the bone," sustains the tension later. The joint is now again flushed out, the fractured surface accurately apposed, the silver wire tightened, fastened, and flattened out. The periosteum is now sutured over the silver wire and line of fracture and the skin closed. He begins passive motion about the fourteenth day and soon has the patient up on crutches. This is the ideal treatment of fractured patellæ in the young and healthy. Special emphasis is put upon the following points: (1) Delaying operation a few days till the more acute joint symptoms subside; (2) thorough cleansing of the joint cavity and fracture surfaces; (3) the use of a single sterilized suture so shaped as not to cut the bone, and not to form a large irritating knot when it is fastened; (4) the elevation of the periosteum and its subsequent suture over the embedded wire which help to prevent infection and irritation; (5) the early commencement of passive motion, thus shortening the period of disability.

How Malaria is Transmitted.—The belief that mosquitoes bear a causal relation to malaria was expressed by Roman writers two thousand years ago, but it has only been in recent years that any attempt has been made to prove the truth of this suggestion. In the *Medical Record* (Feb. 17, 1900) I. P. Lyons has reviewed the literature upon this subject and gives a *résumé* of the investigations made, especially those by Grassi, Bignami, Bastianelli and Dionisi. The ordinary mosquito (Culex) was found to be harmless, but several species of the Anopheles have been successfully inoculated with the tertian and estivo-autumnal parasites, the development of these parasites in the mosquito carefully watched, and the final return of the spores to a human being with the subsequent development of the disease has been successfully accomplished. Practically every step has been followed with the tertian and estivo-autumnal parasites, and the quartan parasite has been followed up to the coccidial stage in mosquitoes, although it has not yet been made to

return to its human host by the bite of mosquitoes. It is thoroughly believed, although not entirely proven, that malarial infection is produced only by the bite of mosquitoes. The harmless Culex lays its eggs on the surface of artificial collections of water while the Anopheles seems to prefer natural bodies of water on the outskirts of towns and in rural districts. The extermination methods must deal with the larvæ and these can be successfully combated by drainage of the pools, by the introduction of fish, or by scattering petroleum or other chemicals over the surface. It is further urged that any case of malaria may be a menace to the public health provided the Anopheles be also found in the same locality and, hence, it follows that every case should be carefully isolated by mosquito netting or otherwise.

Tannopin.—C. Tittel (*Therap. Monatshft.*, Feb., 1900) has obtained some excellent results in intestinal disease of children with tannopin, and considers it decidedly superior to the other recent astringents. The drug, which is a condensation product of tannin and urotropin, forms a dark-brown insoluble powder which in the small intestine splits into its two components. It does this very slowly so that its action is continued in the large intestines, as can be seen by the increased consistency of the stools and the disappearance of the mucus. Since it contains urotropin, it is markedly antiseptic. In mild cases recovery results in from two to three days. It may be added to cod-liver oil if this causes loose movements.

Therapeutics of Splenic Extract.—The use of extracts of animal organs in the treatment of disease will, no doubt, furnish a wide field for valuable discoveries in the future, and give to the medical profession specific remedies for many diseases which are now treated symptomatically. C. R. Carpenter (*Med. Record*, Feb. 17, 1900) has been experimenting with a few cases of typhoid fever by using the extract from the spleen, and explains very satisfactorily the theory upon which he bases his faith in its value. Most acute infections and especially pyogenic diseases cause a leucocytosis which varies largely with the severity of the disease and with the resisting power of the patient's system. In other words, the leucocytes act as defenders against the poisons of disease, but may have assistance from undetermined antitoxic principles in the blood. In typhoid fever there is usually a diminution in the number of leucocytes except early in the disease and when complications occur. This condition is explained by the supposition that the spleen is the chief generator of leucocytes and being one of the organs early involved in typhoid fever, its function is interfered with or destroyed. It is further maintained that the chief benefit derived from the use of the cold-bath treatment is due to the increase of leucocytes which it causes. The mere reduction of temperature cannot explain all the beneficial results which are obtained. Experimentation has shown that the extract of the spleen produces a leucocytosis, and, since it is that organ in particular which is involved in typhoid fever, the deficiency is supposed to be supplied by the administration of its extract, just as the extract of thyroid performs the function of a diseased thyroid gland. The cases upon which the extract of the spleen have been tried were few in number, but most favorable results were obtained and it is believed to be a specific in the disease, aborting its course just as the antitoxin of diphtheria does. It is given in doses of five grains every three hours for the first twenty-four hours, at the end of which time the temperature usually falls one or two degrees. The extract is then given in doses of five grains three times a day. When an anemia is present a hematinic is essential.

Drugs in Obesity.—While the dietetic and hygienic plans give the best results in excessive deposits of fat, many drugs have been recommended. H. Kisch (*Therap. Monatshft.*, Feb. 1900) finds that, while an occasional purge is beneficial in many cases, especially if with hyperemia of the abdominal organs, the constant use of drastics will lead to diminished absorption of food from the bowels and hence actual malnutrition. Alkalies likewise must not be used for any length of time. Vinegar is believed by many to cause increased fat dissolution, but what really results with this, as well as with iodine and the iodides, is a cachexia from chronic poisoning. The latter are only indicated in advanced cases where a rapid reduction is desired, but to the external use of iodine there can never be any objection. Pilocarpine, which like other diaphoretics would increase the heat-radiation from the skin and thus stimulate fat-metabolism, is to be used with great caution where a fatty heart is present; steam-baths act similarly, but also require a healthy heart and arteries. Recently the virtues of thyroid extract have been voiced by many, but it is inconstant in action and fatigue, diminished muscular power, glycosuria and other symptoms have appeared, since it possesses no selective action on fat but attacks proteids as well. If given, the patient is to be carefully watched and the dose must be small.

Treatment of Obesity.—In a recent number of *La Presse Médical* Professor Herman Cohn of Breslau describes Dr. Schweninger's obesity-cure as administered in an establishment in Baden-Baden. The method was decidedly strange, but the results were marvelous, some patients having lost 20 pounds in five weeks, 50 pounds after eight weeks, and, in one case 95 pounds in nine months. All the concomitant symptoms of obesity also improved under this treatment, which consisted of (1) massage of the abdomen, (2) hot baths, and (3) diet. Massage was performed three times a day, before eating, and each treatment lasted fifteen minutes. The patient lies on his back with legs and thighs flexed, and the physician begins by tapping, at first lightly, then with greater force, upon the epigastric region, until he

sinks his two fists as deeply as possible into the abdomen of the patient. During this procedure the patient is supposed to breathe deeply and regularly in order to exercise his diaphragm. In fact, at first the patient can only take five deep respirations, because of the pain, but later he can take twenty deep respirations. The operator now grasps "large pieces" of the abdominal walls in his hands and squeezes them as hard as possible in order to crush the subcutaneous fat lobules. The patient's abdomen is soon covered with bruises. The pain during this "gentle" procedure is such that groans and tears are elicited. And last, but not least, the physician now gets upon the patient and sinks his knees as deeply as possible into his abdomen—especially in the epigastrium—while the poor patient tries to take at first five and later a greater number of deep respirations. That any one could survive this treatment once seems wonderful, but to go through it three times a day! The patients after a while really got used to it, but being a little tired after this massage they usually remained resting on the couch for some time. The hot baths were given in instalments. The first day the arms had a bath, the second day the legs, the third day the hips, the fourth day the arms again, and so on in the same order during all the treatment. Entire baths are never given. The temperature of the baths is at first 99.5° F., gradually increased up to 122° F. The baths last for twenty minutes each. The fatigue following these baths causes the patient to sleep for some time. The diet is peculiar. The dishes and plates are of doll's sizes. The glasses barely hold eleven drams of liquid, and even the knives, forks, and spoons are small. The meals are served every three hours, the patients eating in their rooms, and it does not take long to eat a meal. Everything is served in minute portions. The usual diet limitations are observed. The patient may get for the first breakfast a small slice of cheese, or ten prunes, or one egg, or a plate of turnips, or carrots, or a plate of clotted milk, or a slice of ham. For the second breakfast there is a little meat, or an egg, or a vegetable. At dinner a small slice of roast meat, or a slice of chicken or calf's-liver. The other meals are on the same plan. The patients do not drink with the meals, but half an hour after they are allowed to drink one of the little glasses of Sprudel or Gerolstein water. The total quantity of water allowed each patient a day is about one-half a liter. If they get thirsty a pear or a prune must satisfy them.

Treatment of Phthisis Pulmonis.—A detailed and extended review of the treatment of pulmonary tuberculosis is made by G. A. Evans (*N. Y. Med. Jour.*, Feb. 17, 1900) who has had a wide and valuable experience. In the incipient cases he advises the hygienic and climatic methods as the most serviceable, and claims that the western slope of the Appalachian system from Maine to Alabama is the region which affords the best results. The proper treatment for cases after necrosis of tuberculous tissue has begun, and after evidences of local sepsis and septicemia have appeared, is drainage, to stop the absorption of septic agents and above all to limit or prevent self-infection. The only method of drainage is by expectoration, but the use of internal remedies merely acts by increasing the flow of mucus and as the seat of disease is frequently on the distal side of the mucous glands in the smaller bronchioles and alveoli this method is only partially efficacious. Clinical experience has shown that it is impossible to inspire compressed air where an albuminoid fluid is present in the air passages without causing its expectoration, and that the bronchial tubes and pulmonary alveoli which are at all permeable by atmospheric air are much more so by compressed air. The combination of an antiseptic with the compressed air has given excellent results since the local application of a germicide is aided by the marked increased drainage by expectoration. Twenty-five to thirty-five per cent. solutions of phenol in equal parts of glycerine and water are used in the form of a fine spray for thirty minutes every day under a pressure of about one twenty-fifth of an atmosphere. When cases are not too far advanced complete recovery is claimed.

Treatment of Lobar Pneumonia.—H. Eichhorst (*Therap. Monatshft.*, Feb., 1900) thinks that venesection is done too rarely at the present day in pneumonia and praises its life-saving effect in complicating pulmonary edema. Digitalis should only be employed when the heart demands it and the practice, to begin every treatment with this drug, is to be severely criticised. In many young and strong patients, all medicinal treatment is unnecessary. The rules for alcohol are much the same as for digitalis; it is especially useful in the old and in drinkers and the latter drug often works better if preceded by alcohol. For quick stimulation of the heart caffeine hypodermically is often preferable to digitalis, while injections of camphor are to be resorted to in the more serious cardiac disturbances. Narcotics are to be avoided since cough and expectoration may be suppressed and the bronchi thus become filled; in cases with delirium and restlessness morphine may, however, be demanded. Antipyretic treatment by means of phenacetine and baths is indicated where high temperatures are badly borne; in other cases it is unnecessary. All so-called specifics have failed to prove their reputed value and blood serumtherapy has in most cases disappointed.

Oliver's Hemocytometer.—In the *Boston Medical and Surgical Journal* (Feb. 15, 1900) David D. Scannell describes the principle upon which Oliver's hemocytometer is based, the apparatus required in the process of the examination and the technic of such observation, and also gives the results in 27 cases in comparison with those obtained by the Thoma-Zeiss counter in the same cases. The time required for the whole process by Oliver's hemocytometer is only about ten or

fifteen minutes and is a gain over the half-hour usually expended in the preparation and count when the Thoma-Zeiss apparatus is used. The apparatus required for such observation consists of (1) a flattened tube, 15 mm. in the long diameter and 5 mm. in the short diameter, graduated so that in a scale of 12 centimeters, 100 per cent. being equal to 5,000,000 corpuscles per cubic millimeter, the divisions represent two per cent. each; (2) a capillary pipette with a capacity of 10 cubic millimeters and with a lumen large enough to clean easily; (3) a mixing pipette, or ordinary medicine dropper, provided with a rubber nozzle which fits over the small end of the capillary pipette; (4) a small-sized wax candle; (5) a fixing solution, preferably Hayem's. This solution consists of hydrarg. chlorid. corrosiv., 0.5 gm.; sod. chlor., 1.0 gm.; sod. sulph., 5.0 gm.; aq. dest., 200 c.c. and (*a*) is cleanly; (*b*) does not affect the corpuscles as much as other solutions; (*c*) there is no varitaion in the reading even after twelve hours, so that all of the examination need not be made at once. The mixing pipette being filled with Hayem's solution, the capillary pipette is filled with blood, the rubber nozzle of the mixing pipette quickly fitted over the blunt end of the capillary pipette and the 10 cubic millimeters of blood thoroughly washed into the flattened tube by the compression of the rubber bulb of the dropper. The filling of the capillary pipette with blood and the washing of the blood into the flattened tube should be done quickly lest the blood coagulate in the capillary tube. After the blood is washed out of the capillary tube, detach it from the medicine dropper and make further additions of the fixing fluid from the latter. The contents of the flattened tube are gently but thoroughly mixed after each addition of the fixing solution. The observation is made in a dark room with the candle ten feet away from the observer and the tube held close to the eye. As the fixing fluid is gradually added, drop by drop, the observer must watch carefully for the first appearance of the transverse line of light, so as not to add any solution after the transverse line becomes complete. In 27 cases examined by both the Thoma-Zeiss and Oliver's hemocytometric methods there was a marked similarity in the results, the average difference being only 35,000, or less then one per cent. In successive hemocytometric observations in the same case within a short interval the two readings were identical.

Bacteria and Diabetes Treatment.—Some time ago the bacterial origin of diabetes mellitus was suggested and the use of antiseptics such as bichloride of mercury and auri et sodii chloridum advocated. J. P. Sheridan (*N. Y. Med. Jour.*, Feb. 17, 1900) claims that these remedies do not diminish the glycosuria, but tend to reduce the oxidizing power of the red blood-cells, thereby producing rapid emaciation. Working on the theory of bacterial origin, however, he has used a combination of bromide of gold with bromide of arsenic, called arsenauro, with most favorable results in four cases which he reports. The drug should be pushed to the physiological limit which is shown by the development of symptoms of arsenical poisoning.

The Lymphatic Diathesis.—Lemoine (*Le Nord Médical*, Feb. 1, 1900) says that changes in the blood, the bone-marrow, the spleen, the lymphatic ganglia, and the lymphoid tissues characterize this condition, any or all of these being diseased. The general symptoms are anemia, debility, dyspnea, and in the late stages, emaciation with hemorrhage and edema. For treatment, hygienic measures are indicated, such as fresh air, short and frequent walks, nourishing food, especially milk, eggs, fat and starchy materials; laxatives to promote intestinal secretions, with bitters and tonics, inhalations of oxygen, and massage, frictions, and cold douches in the region of the spleen. Among the drugs in common use ferric chloride, protoxalate of iron, quinine, and cod-liver oil are the best as tonics. Iodides may be given in scrofulous conditions and will diminish the adenitis, but they tend to increase the wasting, the epistaxis, and the visceral complications. Phosphorus and mercury are useless or harmful. Ergotine or hydrastis or perchloride of iron may be used for the hemorrhagic tendency, and quinine if malaria coexists. Bone-marrow promises well, but has been little tried. Universal experience indicates that the best general remedy is arsenic. Of this, Fowler's solution may be given in large doses internally, combined with laudanum to prevent disagreeable effects; or, if the diluted Fowler's solution is injected interstitially into the affected gland or into the spleen, it not only affects the whole system, but causes a rapid and marked atrophy of the tissues at the seat of the injection. Mineral waters and baths may aid in the general treatment, and in cases of isolated lymphadenoma the disease may be checked by early surgical removal. Surgical treatment, however, has met with but little success.

Origin of Toxins in Burns.—To determine the influence of the skin in producing the poisons which lead to a fatal issue in burns, E. Scholz (*Münch. med. Woch.*, Jan. 30, 1900) conducted two sets of experiments, in the first of which large scalds of the peritoneum were compared in effects with similar traumatisms to the skin. The animals with the peritoneal wounds showed more severe symptoms, hence it is fair to assume that the skin is not the only source of the toxins. The second series contrasted the results following burns on hyperemic and anemic skin; in the former case the rabbits died with convulsions, while in the latter no ill results were noted. It is thus concluded that the blood itself, rather than the tissues, is the seat of the chemical change.

Antitoxin for Diphtheria Immunising.—The New York Board of Health reports show that there were about 700 more cases of diphtheria during 1899 than during 1898 and that the death-rate was 13.1 against 12.2 per cent. in 1898. J.

S. Billings (*N. Y. Med. Jour.*, Feb. 17, 1900) draws attention to the fact that although the antitoxin treatment of diphtheria acts as a specific and effective curative remedy, it cannot bring about any marked decrease in the number of cases since the disease spreads rapidly and easily from person to person through many channels, and perfect isolation is almost impossible, especially among the poorer classes. He urges, however, that the prophylactic use of the antitoxin will furnish an effective means of lessening the number of cases and points out that there were over 600 less individuals immunized during 1899 than during 1898. In over a thousand cases immunized only six contracted the disease, which was in every instance mild in form. It has been found that 150 units is not always successful and that it is much better to use 300 units in children and 500 units in adults to immunize against the disease. Furthermore the reactionary symptoms are not so great when the larger dose is used.

Fleas and the Plague.—The daily as well as the medical press, taking its cue from Simond's article on the transmission of the plague in the *Annales de l'Institut Pasteur*, 1898, have regarded the flea as a probable agent in the spread of the plague. The fleas which live on infected rats and mice are supposed to bite human beings and thus infect them. Bruno Galli-Valerio (*Centralblatt f. Bakteriologie*, Jan. 6, 1900) disputes Simond's conclusions on the following grounds. The flea that bites man (pulex irritans) has an ovoid body, is reddish-brown in color and has no characteristic comb-like structure on the head and prothorax. The flea of rats (typhlopsylla musculi) has a thin body, is yellow and has spines along the head and comb-like structures on the thorax. Other species of flea are found on the mouse. The important feature is that none of these fleas bite man and Galli-Valerio, notwithstanding the fact that he placed fleas on his body—under watch-crystals—was unable to make them bite him. He therefore concludes that this means of transmission is not probable. He does not, however, give us any data as to what a hungry rat-flea may do under unknown circumstances.

Curability of Epilepsy.—That the usual definition of epilepsy, as a "disease characterized by tonic and clonic spasms and followed by a loss of consciousness," does not describe the conditions with scientific accuracy in a large percentage of cases is brought out by W. P. Spratling, Medical Superintendent of Craig Colony (*Medicine*, Feb., 1900) who from a wide experience shows that many patients have tonic convulsions only others, clonic convulsions; while a large number have very incomplete loss of consciousness. Epilepsy in its initial stages he divides into two groups, the *false*, which includes such cases as may be traced to a true physical cause, recent in origin, and the *true*, which includes cases which have congenital or acquired organic defect or deficiency of the brain. The former group includes many cases which are readily cured and form the basis of the claims of eye specialists, gynecologists and others, who cure some cases by trifling operations. The second group demand much attention and a serious prognosis is always present. Spratling is emphatic in his disapproval of the use of bromides for all classes, especially in children. For the pronounced epileptic Colony treatment is the best form. This treatment, as outlined, is as follows: (1) The colonizing of the patient means that he is placed under such restrictions that at all times entire control of his acts is secured. (2) He is treated as an individual at first, along broad hygienic lines, for many come in poor general health, and the first demand is that they be built up, reconstructed physically. (3) To do this a diversity of means is employed. Medicines, systematic occupation, gymnastic exercises, baths, special feeding, and the use of such moral agencies as may be essential. (4) All the while he is being studied for aura; for the presence in the blood, urine, or other secretions of noxious substances that may cause or help to cause the disease. (5) He must eat only such food and only in the manner prescribed for him. This is regarded as most essential. (6) He must not overeat, for by tradition founded on fact he is apt to gormandize. (7) He is not permitted to use alcoholic stimulants in any form or to any extent. Tea or coffee, if properly made, may be taken in moderation. Tobacco may be used in moderation. (8) At the Colony every epileptic received is made to undergo a complete change of life. If he was of sedentary habits he is put out in the fields, under the sun and in the air—not abruptly, but gradually. His entire life, as far as can be, is thrown into new channels. If, when received, he is feeble, as many of them are who have suffered from long neglect, he is put into the hospital, fed on light nutritious foods, and every effort made to build him up. (9) If it is seen at any time that he fails easily under any mental strain, such as study or close reading, he is made to abandon such pursuits and use his body only. (10) If his body is big and strong and he is weak intellectually, then the opposite course is pursued, the object always being the coequal development of the mind and body—no vitiation of one at the expense of the other. (11) If he has any natural bent or inclination in the way of study or work, it is recognized and encouraged, for mental occupation in the treatment of epileptics is an important factor. Due heed to the foregoing over a sufficient time has cured from six to eight per cent. of all cases that came to the Craig Colony.

For Menstrual Pains.—*Gazette hebdomaire de Paris* gives the following formula:

℞ Codein.....gr. ¾
Chloral.....gr. xv
Ammonium bromide.....gr. xv
Aquæ camphoræ.....℥i.
M. To take in two doses.

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SATURDAY, FEBRUARY 24, 1900.

DIET IN CONSUMPTION.

PATIENTS who have been successfully treated in German and Swiss sanatoria insist especially upon the quantities of food that they found themselves able to consume under the direction of their physicians. At Nordrach, for instance, the rule is for the patient to eat twice as much as he has previously been accustomed to eat, and patients very soon fail to find it the task they anticipated.

Abundant food is a very serious consideration; for the weight of the patient is an important element in his constitutional resistive vitality. Some years ago the New York Mutual Life Insurance Company showed from mortuary statistics that "of persons with untainted family histories twice as many died among those who were under weight with respect to their height as those above the average weight; that family history influenced the consumption death-rate far less than the personal condition (referring especially to the normal weight), and that it is, therefore, a far less valuable indication of an underlying phthisical predisposition."

All experience coincides in proclaiming the vital importance of a gain in weight for patients suffering from consumption. Practically all the lauded specifics for the disease have been such as acted as tonics and increased the appetite. The influence of suggestion in all cases of tuberculosis seems undoubtedly due to this tonic effect of renewed hope upon the patient. The great specific concealed behind all the others that have been used, and making them all for a time seem of value, is the increased consumption and assimilation of food that they have induced. It is this that must constitute the groundwork of any successful method of treating consumption, and just as soon as the general nutrition fails to improve, any remedy or method of treatment will inevitably fail.

THE PATHOLOGY OF INSANITY.

THE brain has been justly regarded as a most mysterious, obscure and Sphynx-like region in its manifestation of disease. Partly because the lesions accompanying mental diseases are so slight, and partly owing to the complexity of the nervous system of man our knowledge of the pathology of insanity is in a very crude state in comparison with that of other diseases. Insane asylums are full of instructive material, but hospital physicians, too busily occupied with the requirements of routine administration, have unfortunately let slip their opportunities to enlarge this sphere of knowledge.

New York led the way in revolutionizing this condition, by organizing a Pathological Institute for the insane asylums of the State, where pathologic material could be worked up by experts and correlated with the clinical experiences of the physician attending the cases. Whether this same need of such an institute had been more slowly finding its way to concrete expression in London, or whether the London County Asylums caught the idea from us, and immediately put it into action, we cannot say.

The first volume of the "Archives of Neurology" from the Pathological Laboratory of the London County Asylums has just appeared, and it is with a feeling of pleasure that we realize that the men in London have accomplished a much desired work. They have "ushered in an era of accelerated progress in the scientific unraveling of the maze of mental pathology."

General paresis has received the greatest amount of attention during the past year and the potent influence of syphilis has been clearly brought out by the investigations. Some twenty-four articles on allied subjects have been worked

out by Dr. Mott and his staff of assistants and physicians to whom the privileges of the laboratory have been extended. No narrow spirit of investigation has prevailed. Statistical, historical, racial and geographical considerations have been studied in connection with the clinical and pathological questions. The "Archives of Neurology" contains the work of the technical micropscopist, the chemist, the biologist and the practising physician, and counts research a progressive, comprehensive study, not a mere "microscoping" and "test-tubing."

If the yearly output of work equals that of the past twelve months, alienists will look to the Archives for brilliant results. The only regret we can express in connection with its appearance is that the name chosen is almost identical with that of the publication of the New York State Pathological Institute.

ANTIVIVISECTION ONCE MORE.

PROMINENT antivisectionists gave due warning years ago that they hoped to succeed by keeping unremittingly at it in securing the utter abolition of animal experimentation. True to their promise the bill for the regulation of experiments upon animals in the District of Columbia comes up at every session of Congress. This law, it is confessed by the antivivisectionists themselves, is meant to be only the entering wedge for legislation along similar lines throughout the country. The prestige of a legislative victory at the national capital would carry great moral weight with the State legislatures. Moreover, the Government laboratories, most of them, are situated in the District of Columbia and the blow is especially aimed at them, since, so long as animal experimentation is carried on directly under authority from the Government, the opponents of experiments upon animals cannot hope to prevent this method of investigation at other places.

The gauntlet has been definitely thrown down. The battle for the right of experimentation on animals is on. Each succeeding session of Congress sees the struggle renewed. If the medical profession of the country would not see invaluable opportunities for the investigation of disease in this country ruthlessly snatched away because of irrational fanaticism, it must not tire of this ever-recurring contest.

We venture to say that in recent years the cause of antivivisection has gained more adherents than has the principle of animal experimentation. This is mainly due to the fact that a most persistent and untiring propaganda of the doctrines of the antivivisectionists has been made. Fanaticism has a special attraction for our generation. It is only necessary to recall in this connection how many supposedly intelligent persons are carried away by the shallow absurdities of Christian Science. There are any number of people constantly on the lookout for some new fad. When their latest hobby happens to be antivivisection they become most earnest advocates and zealous propagandists. As an offset to all this every doctor should make it his business to spread the light of a right understanding of the position of the profession in this matter. Only in this way can we be assured that offensive legislation will not eventually be enacted. Apathy because of confidence in past defeats of the bill may at any time lead to enactments that would not only seriously cripple the great work of the Government laboratories, but start a wave of legislative enactments that would be felt disastrously in every experimental laboratory of the country.

ECHOES AND NEWS.

NEW YORK.

Harlem Hospital Trouble.—The House Physician, Dr. Campbell, has been suspended for three months and the visiting physician, Dr. Haubold, for one week, owing to a general family quarrel that had arisen among the physicians, the superintendent and some subordinates.

Some Seceders.—Owing to certain developments in the arrangements for the Tuberculosis Congress announced to be held under the auspices of the Medico-Legal Society, Drs. J. Blake White, L. A. Knopf, Egbert Le Febre and Charles E. Quimby have withdrawn their names and influence from any connection with the Congress.

Dr. McCosh.—We are gratified to be able to announce that Dr. Andrew J. McCosh, as we go to press, is rapidly recovering from the septic infection from which he has been suffering since Thursday, February 15th. On that day he became inoculated with some unusually virulent sepsis while performing laparotomy upon a child who was afflicted with a purulent general peritonitis.

State Hospital Buildings.—Under the Charter of the City of New York the authorities of the city have claimed the right to inspect the buildings and direct the manner of their construction, and also to inspect the boilers of the Long Island and Manhattan State Hospitals. Attorney-General Davies decided, on February 16th, at Albany, that the city has no such jurisdiction.

The Influenza.—Superintendent O'Rourke of

the Department of Charities reports that there is a constantly growing number each day of patients suffering from influenza being admitted into the public hospitals. The wards for pulmonary diseases in most of the hospitals are full and cots in other wards are being used. The increased number of cases of bronchial and pulmonary affections in private practice is also marked.

The State University.—The *School Bulletin* announces the failure of Governor Roosevelt's Unification Commission in the reorganization of the State University. It says that there seems to be general agreement that the bill stands no chance whatever of becoming a law; it has already been thoroughly discredited by the public press, and in fact was introduced only with apologies in each House of the Legislature.

Contagious Diseases.—For the week ending February 17, 1900: Measles, 891 cases and 21 deaths; diphtheria, 310 cases and 43 deaths; laryngeal diphtheria (croup), 29 cases and 11 deaths; scarlet fever, 212 cases and 21 deaths; smallpox, 1 case; chicken-pox, 42 cases; tuberculosis, 183 cases and 166 deaths; typhoid fever, 19 cases and 5 deaths, cerebrospinal meningitis, 10 deaths. Total, 1687 cases and 277 deaths.

Charities and Corrections Departments.—A bill has been introduced into the State Legislature empowering the Commissioner of Correction to remove from his department to that of Charities any person committed as a vagrant upon certification that the person is aged, feeble and infirm, and mentally and physically unfit to perform manual labor. Commissioner Keller is opposed to this measure and is using his influence against its passage.

Yellow Fever from Santos.—A fireman aboard the German steamship "Taormina" of the Sloman Line, which arrived February 19th, from Santos with a cargo of 34,100 bags of coffee, died of yellow fever on February 12th, when the ship was seventeen days out. He was buried at sea. A fireman and messmate of his fell ill with the fever just after the latter's death. He was removed to Swinburne Island Hospital. The "Taormina" is detained for disinfection. She will proceed to the upper bay and discharge her cargo into lighters.

J. Hood Wright Memorial Hospital.—According to the annual report, 1357 cases were treated during 1899 in the emergency ward of this institution; 1164 patients were attended by its ambulance surgeons and not taken to the hospital; in all 8809 persons received care. In December the hospital ended its thirty-sixth year as a dispensary, established by Dr. Rodenstein, and the fourteenth year of its added work as a hospital, free of debt and with property worth $100,000. The receipts for 1899 were $21,202.29; the expenses amounted to $23,164.92.

Arrest of an Epileptic.—Hugh Higgins, Jr., an epileptic, who has been for years under treatment by Dr. William B. Noyes at the De Milt Dispensary, fell in a fit while on his way to visit friends in Brooklyn. A policeman arrested him on a charge of vagrancy and intoxication, and he was committed to jail for twenty-nine days. His father, on learning of this commitment, went to court and upon his statement of the circumstances Higgins was at once released. The patrolman should at least know when it is necessary to have a physician's opinion.

City's Population and Death-Rate.—The Board of Health has prepared an estimate of the population of this city on January 1, 1900, and an estimate of the death-rate for the first week of February. The population numbers 3,654,594 and the death-rate is 18.09 per 1000. Brooklyn Borough has the lowest death-rate, 16.35 per 1000. Manhattan has a death-rate of 19.65 per 1000 of estimated population. During the week ending February 3rd there were 1631 cases of contagious diseases, of which 118 died. One of these deaths was from beriberi.

Homeopathic Medical Society.—The Homeopathic Medical Society of New York State, at a meeting at Albany, on February 14th, elected the following officers: President, W. W. Butler of Brooklyn; first vice-president; E. W. Bryan of Corning; second vice-president, L. A. Martin of Binghamton; third vice-president, Emily Swett of Medina; secretary, Dewitt G. Wilcox of Buffalo; treasurer, Charles Deady; necrologist, W. S. Garnesey; nominees State Board of Medical Examiners, J. W. Garrison of New York, E. E. Hasbrouck of Brooklyn, Asa S. Couch, J. W. Candel and J. M. Lee.

Disposal of Garbage.—Representations of the Barren Island Reduction Plant were heard by the City's Committee recently in opposition to the bill before the Legislature for the removal of the plant. They maintained that the plant had been constructed at a cost of $600,000; that it consumed the garbage of the Greater City at practically no expense, the products paying the expense of the collection of the garbage and the operation of the plant. During the past two years the company has expended about $60,000 to remedy the features that were complained of as nuisances; there is now no offensive odor about the plant, and the only complaint is from the smoke and odor issuing from the chimneys. They thought these conditions could be corrected and they are willing to expend what money is necessary to accomplish it. The expense of an incineration plant, as proposed in Senator Wagner's bill now before the Legislature would be something enormous. The original expense would be about $13,000,000, and the expense of running the plant would probably cost the city a million and a half annually.

The Gerry Society.—The contest between the State Board of Charities and the Gerry Society (the Society for the Prevention of Cruelty to Children) has reached an acute stage. It will be

remembered that the Board of Charities recently took legal proceedings to compel the Society for the Prevention of Cruelty to Children to submit to its inspection and control. The Society claimed it was not legally subject thereto, and the Court of Appeals sustained its claim. The Board of Charities thereupon introduced a bill into the Legislature bringing that society under its inspectorship. Mr. Gerry in behalf of the Society has privately circulated a letter to certain societies, asking them to write at once, and requesting their colleagues to write to their respective state senators and assemblymen, urging them not to sanction the proposed legislation. This, the Board's officers say, is simply further evidence of an attempt on the part of Mr. Gerry, for personal reasons, to break down and destroy that conservative state supervision which has in spite of such ulterior influence, protected the helpless of the State for over a quarter of a century, and with the support of the people of the State will continue to do so.

Tenement-House Exhibition.—The Charity Organization Society has now on exhibition on Fifth Avenue a most remarkable display of models, plans, photographs, maps, charts, and tables of statistics, bearing upon the general subject of tenement-house life and sanitation. The exhibition is a most striking object-lesson in many directions. The present condition of the tenement-houses of New York is strikingly presented, and the maps illustrate graphically that where overcrowding and filth are there is sickness and disease. The evils arising from the present condition are a distinct menace to the welfare of the community. There are at present over 4400 tenement-houses in Manhattan borough, and new tenement-houses of the most objectionable type are being erected at the rate of 2000 a year. This exhibition is an effort on the part of the Society to place before the public in concrete form a clear and comprehensive idea of existing conditions. so that intelligent action may be taken to remedy them and prevent their multiplication. No more concrete opportunity has ever been offered to the members of the profession, or to the public, to familiarize themselves with the degrading conditions under which decent and respectable working-men and their families are forced to live. The Society is acting wisely in the belief that, when existing conditions are understood and a knowledge of what has been done in other cities to improve similar conditions has been supplied, a thorough and satisfactory remedy will be applied.

PHILADELPHIA.

Health Report.—Deaths in the city for the week ending February 17th were 503, a decrease of 28 over those of the previous week and a decrease of 37 from the corresponding week of last year. Contagious diseases: Scarlet fevere, 93 cases, 3 deaths; diphtheria, 122 cases, 25 deaths; typhoid fever, 76 cases, 14 deaths.

Class Reunion.—The Executive Committee of the Alumni Society, University of Pennsylvania, medical class of '75, is planning to hold a reunion of the class at the coming commencement in June next. Members of the class are requested to send their present addresses and a brief account of their careers since graduation to Charles W. Dulles, 4101 Walnut street, Philadelphia.

Silver Nitrate in Phthisis.—At a meeting of the County Medical Society, February 14th, Dr. T. J. Mays exhibited several patients to show the results following the use of injections of silver nitrate in cases of phthisis. Some advanced cases showed marked improvement after three injections had been given. Five minims of a 2½ per cent. solution were used at each injection. Patients suffering from asthma and bronchitis have also been entirely relieved by this treatment.

Typhoid Epidemic Threatened.—Conditions seem to be ripe for another epidemic of typhoid fever. Last week's health report shows an increase of more than 35 per cent. in the number of cases and more than double the number of deaths of the previous week. The State Board of Health is endeavoring to locate sources of contamination along the Schuylkill river and to ascertain the exact condition of the water. Bacteriological tests are being made to detect the presence of the bacillus coli communis in the river water. Secretary Lee states that the typhoid bacillus is difficult to detect in water, but that the colon bacillus is never present without being accompanied by typhoid germs.

Report Sidetracked.—The results of a four months' investigation of the alleged irregularity in State examinations were presented to the Medical Council of Pennsylvania on February 13th. The result was the following resolutions "Resolved, that the report of the Board of Medical Examiners, together with all the testimony submitted therewith, be received and referred to a committee of five members of the medical council for the purpose of having a thorough examination made of all the facts alleged and testified to, so that a full report may be made to the council, for their subsequent action.

"Resolved, further, that the committee be requested to report what action, if any, can be instituted under the law looking to the permanent correction of the evils complained of."

The committee appointed consists of three lay members—the Lieutenant-Governor, the Attorney-General, and the Secretary of Internal Affairs—and two physicians, both of them members of the Examining Board.

Post-Typhoidal Insanity.—Dr. J. M. Da Costa discussed an unusual case of this affection at the Pennsylvania Hospital February 17th. The patient was a man of 21, who had passed through an ordinary attack of typhoid fever without being delirious or showing any extraordinary nervous manifestations during its course. The temperature became normal the seventeenth day of the

disease. Seven days after this a curious mental state developed, taking the form of a nocturnal delirium of mild type. The patient was confused, failed to recognize the nurses, thought he was being treated wrongly, wished to go to work, etc. During the day there were no hallucinations or confusion and the patient did not remember the delirium of the preceding night. This condition still persisted at the time of the clinic. The case illustrated a type of confusional insanity following typhoid fever, and was stated to be almost alone in the history of the affection in that it occurred only at night. The prognosis was considered favorable because of this fact.

Ligation of Abdominal Aorta.—The findings of the autopsy made upon the body of the patient in whom Dr. W. W. Keen ligated the abdominal aorta were reported February 14th. The ligation was made at a point just below the celiac axis and immediately above a large aneurismal sac. The patient lived 48 days after the operation. The femoral pulse was re-established 24 hours after the ligation and in three days pulsation began in the aneurism.

Autopsy showed the condition to have been one of false aneurism. The anterior wall of the sac was made up of the aorta and the condensed surrounding tissues, the posterior wall being largely composed of the bodies of several vertebræ, these being considerably eroded. The opening in the aorta was on the posterior aspect of the vessel. The ligature, which was composed of four strands of floss silk, had cut completely through the aorta, death resulting from hemorrhage at this point. No clot was present either above or below the point of ligation.

Dr. Keen considers the case as demonstrating the possibility of successful ligation of the aorta under modern aseptic surgery. In any subsequent case he would use a broad ligature of tape or silk ribbon in order to avoid severing the artery.

Laryngological Society.—The annual meeting of the Eastern Section of the American Laryngological, Rhinological and Otological Society was held in this city February 17th. Cases of "Empyema of the Frontal Sinus" were reported by Drs. F. T. Rogers of Providence, R. I., and T. R. Pooley of New York City. The former directed particular attention to the fact that symptoms were referred to the opposite sinus instead of to the one affected.

Dr. A. B. Duel of New York City reported a case of "Empyema of the Antrum of Highmore of 15 years' Duration," with recovery after operation. A fragment of a tooth broken during extraction was the nucleus of a calculus found in the antrum. Various operations and attempts at drainage had been resorted to and during one period of five years the patient had used daily irrigation. The symptoms becoming aggravated the patient sought relief, and a radical operation was advised and performed. An opening large enough to admit a finger was made through the canine fossa, the cavity of the antrum washed out, the calculus removed, the thickened lining membrane curetted, and the cavity irrigated and drained. In four weeks the lower opening had healed.

Dr. Duel advises the opening of the canine fossa in cases of antrum disease of long standing, where the lining membrane is thickened and needs curetting, for the following reasons: 1. It affords an easy and direct means of access. 2. It is the part most favorably situated anatomically for drainage. 3. An opening can be made large enough to admit a finger, to permit curettage, and to allow inspection. 4. It promises a rapid and certain cure. 5. It is not likely to be infected by food, it can be kept open by drainage, and it can be closed by scarifying the soft tissues.

Dr. W. J. Freeman of Philadelphia read an exceptionally able paper on "Rhinoscleroma" and reported a case. The patient is a Russian who has been in this country but a few years. He has no headache, cough, or ear trouble, and his general health is excellent. The nostrils are almost occluded, the uvula congested and relaxed, and the lingual tonsil enlarged and red. The characteristic bacillus was found.

Dr. H. H. Curtis of New York City reported an interesting case of "Primary Epithelioma of the Maxillary Sinus." The patient suffered from neuralgic pain and tenderness was detected, but no discharge was present. The sinus was trephined through the cavity of the last molar tooth. In ten days the nose was involved and the whole jaw tender. A larger opening was made and the entire cavity evacuated, syringed with peroxide of hydrogen and packed daily with iodoform gauze. In two weeks there was difficulty in swallowing, in four weeks the nasal cavities were occluded and a tumor the size of a large apple projected externally. The pain was so intense that five grains of morphia were required each night. The death of the patient occurred at the end of the sixth week.

CHICAGO.

College of Physicians and Surgeons.—This college has procured a lease for its building from the University of Illinois for a term of twenty-five years, at an annual rental of $12,000. The contract provides that the university shall have one-third of the net earnings of the medical school, and the stockholders the remainder.

Filters in Evanston.—The question of a city supplying pure drinking water to its people by putting a filter in each residence in the city was thoroughly discussed recently by the Evanston City Council. The cost of putting in a filter in each house and maintaining it for twelve years would be $72.45, while the rental of each for the same period would be $72.00. University professors and physicians endorsed the use of filters at this meeting. It is believed that a filter will be put in each house.

A Rich Charity Patient.—A few days ago, a charity patient by the name of Sam Besick, sixty years of age, died at the Chicago Baptist Hospital and was believed to be penniless. Money and securities amounting to $5000 were found sewed in his clothing. His tattered coat and waistcoat were literally lined with gold and silver coins. There were fifteen one hundred dollar bills sewed in an inner pocket, and a leather purse containing two hundred dollars was found under his coat collar. The money had been there so long that the coins were worn smooth and the purse was half-full of gold dust.

Visiting Medical Schools.—A committee of Rush Medical College, consisting of Drs. E. Fletcher Ingals, J. M. Dodson, Frank Billings, and Arthur Dean Bevan, headed by President Harper of the University of Chicago, recently returned from the East where they visited and inspected the Harvard Medical School, the new School of Columbia University, and the Johns Hopkins School of Baltimore. It is said that a new building will be erected on the property of Rush Medical College within the present year, provided the trustees can secure enough money to make up the balance needed, and this building will be devoted entirely to lecture rooms and laboratories.

Death of Dr. Edward L. Holmes.—Dr. Holmes died February 12th of pneumonia. He was born at Dedham, Mass., in 1828. He was graduated from Harvard at the age of twenty-one. In 1854 he obtained his degree of doctor of medicine from the Harvard Medical School. Dr. Holmes was prominent in Chicago medical circles from the moment of his arrival in this city in 1856. In 1858 he founded the Illinois Eye and Ear Infirmary. His association with Rush Medical College began in 1860, when he was appointed a lecturer on eye and ear diseases. In 1867 he was given a professorship; in 1890 he was president of the college. He was a member of nearly all of the local medical societies and of the Illinois State Medical Society.

Mortality Statistics.—There were 531 deaths reported during the week ended February 10th. There was a diminished number of deaths as compared with the week before from the following chief causes: Diphtheria, 6; pneumonia, 13; typhoid fever, 5, and consumption, 2. Pneumonia was responsible for 100 deaths, and bronchitis for 35. As compared with the corresponding period of last year, the mortality from typhoid fever was remarkably low, there being but three deaths during the week as against 14 for the period of 1899. Of the 531 deaths during the week, 196 were among children under five years of age, and 106 were of persons over sixty years, a total of 296 deaths at these age periods, or more than 55 per cent. of the total mortality. Two hundred and fifty-two cases of contagious disease were reported.

Chicago Pathological Society.—At a meeting, held February 12th, Dr. Alice Hamilton presented a paper on the proliferation of elastic fibers in new growths. The growths examined were benign connective tissue tumors, fibrosarcoma and alveolar sarcoma, carcinoma simplex and scirrhus. In all classes of growths, although not in every individual case, elastic fibers were found in the stroma. These fibers varied in abundance, the number apparently being in direct proportion to the richness in elastic fibers of the organ in which the growth occurred. The fibers could seldom be traced to blood vessels. They were most abundant in epithelial growths which showed a well-developed stroma and were often found in large numbers in rapidly growing tumors. The proliferation of elastic fibers in new growths is not mentioned in any of the text-books on pathology.

Disposal of Sewage.—With the introduction of sewerage systems there is one point that should not be overlooked, namely, discharging the organic wastes of a city on the hand of a sister city down the stream. Sewage, unless it is discharged into a stream of sufficient size to make it harmless by being sufficiently diluted, should be purified. There are several methods of accomplishing this, *viz.*, by broad irrigation, chemical precipitation, intermittent downward filtration, and by a septic tank disposal. As the last mentioned is by far the most economical and gives excellent results it is best adapted to smaller cities. Describing briefly the septic tank, it is an air-tight and light-tight structure, made so as to create the conditions for the growth of the aerobic forms of bacteria. The sewage enters this tank, is acted on by the aerobic forms of bacteria which decompose the organic matter and by the processes of nitrification produce the nitrates and nitrites forming mineral compound which are dissolved by the liquid matter and carried away. The result of this action is that after the sewage passes under several boffle boards and finally discharges over a weir in a thin sheet it is a clear liquid, showing little resemblance to the sewage entering the tank. All that remains in the tank is a harmless sludge devoid of almost all organic matter. This method of sewage disposal, which is receiving much attention in the engineering world, was introduced here by Professor Talbot of the University of Illinois. The State owes much to Professor Talbot, in solving this great problem of sewage disposal so practically and efficiently.

Chicago Medical Society.—At a meeting held February 14th, the subject for discussion was surgical affection of the kidney. Dr. L. L. McArthur discussed the symptomatology, diagnosis, treatment, and prognosis of neoplasms of this organ. Dr. M. L. Harris followed with a paper on renal calculi. He spoke of the etiology of kidney-stones, their experimental production; the influence of bacteria in the formation of stones. He pointed out the analogy between kidney-stones and stones of other ducts and organs; also the difference between primary and secondary

stones. The value of pain and urinary changes in the diagnosis of stone was touched upon. The X-ray and urine-segregator were referred to as diagnostic aids. Finally, he dwelt upon the necessity for operation, methods, and results. Dr. D. N. Eisendrath discussed the pathology of renal neoplasms, their etiology and frequency, the general character of renal growths, methods of extension, relation of renal growths, simple or benign forms, sarcomata and carcinomata, and the relationship of renal growths to adrenal structures. Dr. M. Herzog spoke on the peculiar mixed tumors of the kidney. He said that the kidney is a peculiar organ from a histogenetic point of view. It is preceded by two temporary embryonic structures. It is therefore *a priori* not at all improbable that we may find in it peculiar embryonic inclusions which may become the matrix of tumor formation. Tumors of the kidney are frequently puzzling, and the histology and histogenesis of such neoplasms have formerly baffled pathologists not a little. Among the most interesting of renal neoplasms are the mixed tumors, containing epithelial as well as connective tissue elements. The author advanced the views held as to the origin of these mixed tumors or embryonal renal adenosarcomata, and closed his paper by reciting his own theory as to their histogenesis.

GENERAL.

Influenza in Berlin.—The influenza still continues to gain ground; there are more than 80,000 persons in Berlin suffering from the malady, although there has been a light mortality.

X-ray for Cancer.—It is reported from San Francisco that Dr. J. M. Selfridge of Oakland, after suffering from cancer of the face for twenty-five years, has been cured by X-rays. After three recurrences following operative procedures, Dr. Selfridge last October began a series of applications of the X-ray to the growth; all traces of the cancer have disappeared, but the skin and tissue are sensitive. The exposures are being continued.

Hospital Ship "Maine."—Lady Hesketh, daughter of the late William Sharon of Nevada, is the latest American to take an active part in the hospital ship "Maine." She has enlisted the interest of John Kirkpatrick of San Francisco in regard to the formation of a committee for the Pacific Coast, and has opened a subscription with $500. Her efforts, combined with those of Lady Adair, who recently arrived from London on a similar mission, will doubtless be effectual in supplying the funds necessary to meet the expenses of the "Maine," which amount to $15,000 per month.

Army Surgeons Wanted.—The Medical Department of the Army is in need of assistants in the Philippines. Applications for positions as acting assistant surgeons will be received by the Surgeon-General of the Army at Washington. Applicants must be graduates of reputable medical colleges, and have had practical experience in hospitals or private practice. Men between the ages of twenty-five and thirty-five are preferred. All applicants will be examined as to their physical and professional qualifications for service in the Philippines before they are accepted. Contracts will be made for one year, with the understanding that the approved candidate will remain in service for a longer period if his services are required. Applications should be accompanied by one or more letters from well-known professional men, giving testimony as to character and qualifications. Surgeon-General Sternberg announces that letters designed to produce political effect will injure rather than benefit the applicants' chances.

Demented Soldiers.—A report that 250 demented United States soldiers had arrived at San Francisco and were distributed for treatment led to an investigation by order of Adjutant- General Corbin. The report shows that the actual condition has been greatly exaggerated. The commitments of enlisted men to Government hospitals for the insane by the Secretary of War from May 1, 1898, to the present time shows as follows: Admitted to the hospitals: Regular Army, 134; State volunteers, 70; United States volunteers, 10; ex-soldiers recommitted, 9; a total of 223 men. Of this number there have since recovered and been discharged: Regular Army, 68; State volunteers, 54; United States volunteers, 6; ex-soldiers, 1; a total of 129. There are now under treatment at the hospital: Regular Army, 66; State volunteers, 16; United States volunteers, 4; ex-soldiers, 8; a total of 94 military patients. Of the total number treated at the hospital only thirty-seven men served in the Philippines, and of these eleven have been discharged as cured. There was not a single insane patient among nearly two hundred and seventy invalid soldiers just brought home from the Philippines on the hospital ship "Missouri."

The Plague.—Advices from Honolulu February 2nd state that no new cases of bubonic plague had developed there since January 25th, all detention camps were free from sickness of any kind, and the health officers were under the impression that the plague had about run its course. There were still 7400 Japanese and Chinese in quarantine. The health officials have evidently done thorough work, but it has been at great expense. During the quarantine 10,000 people have been in the isolation barracks and upward of 8000 people have been rendered homeless by the burning of buildings. It is estimated that the expense entailed will exceed $1,000,000; the military establishment alone costs about $1300 a day, and in addition to this guards and inspectors employed by the Board of Health have until lately cost half as much more. For nearly a month the Government supplied the rations to about 1900 persons in the quarantine district. In the promptness and thoroughness of the work the health authorities of Honolulu have certainly set an example for the rest of the world. In connection

with their quarantine work a general raid has been made upon the rats. A day was set apart and every householder was supplied with a package of poison for use in destroying these vermin. The latest reports from Manila state that there have been within the walls of that city 52 cases of plague and 43 deaths. The victims were all Chinamen. The famine and the plague continue advancing their deadly work in India.

Medical War News.—In spite of the extremely complimentary despatches that are coming from South Africa regarding the efficiency of the medical corps, the work is not being done as smoothly at is appears upon the surface. In the camp at Modder River typhoid fever appeared early among the soldiers in the ranks and many of them died of the disease. The outbreak was due to the infected river water. At the same camp a severe form of diarrhea attacked the troops; the stools were very acid, frothy, and of a light-green color, a little blood and much mucus being mingled with the liquid discharge. The malady runs its course in about a week, but leaves the patient very weak. That affection was attributed to the sand storms which have frequently prevailed, lasting from an hour to an entire day. The gritty particles of sand breathed and swallowed are held responsible for the diarrhea. It would seem more probable, however, that the germs contained in the sand have been a more active agent than the irritating presence of the sand itself.

On January 8th a serious fire occurred in one of the barrack-hospitals at Maritzsburg; two wards containing 50 patients, were completely destroyed. Fortunately all the patients were gotten out uninjured. The fire is ascribed to the upsetting of a lamp. It has been found that the khaki suits do not afford sufficient protection for the men when sleeping on the field. It is said that extensive orders for woolen khaki uniforms have been placed with manufacturers. The word "khaki" signifies a color (that of mud) and not a material. The hospital ships afford most refreshing quarters for the sick and wounded as they come down from the camps. The correspondent of the *British Medical Journal* reports that at Durban they are having cloudless, blue skies from week's end to week's end, with now and then a shower of rain to relieve any possible monotony. Cool breezes from the southwest, the fresh salt smell of the sea, and an equable temperature day and night are bringing back to health and strength the hundreds of poor, unfortunate sufferers.

The German Army.—The report of Dr. John M. Woodbury, of New York, late Major and Chief Surgeon, U. S. V., who, during the past summer, as United States Commissioner, observed the maneuvres of the German army in the field with reference to their hygienic, sanitary and medical arrangements, has been made to the Secretary of War. The report covers the ground most admirably, and contains some suggestions that it may be found advantageous to adopt in our own army. Regarding the food, the report says that the quality is excellent and the quantity is sufficient, being one-half pound of meat per day per man, a pound of fresh vegetables, a ration of split peas, or beans for soup, and two ounces of coffee, chocolate or cocoa. Each man carries his own cooking utensils, consisting of a tin cannister, in which his provisions are packed. When the top or lid is removed the bottom may be used as a kettle and the top as a coffee-pot. In the field two men usually mess together, one making soup in the bottom of his cannister while the other makes coffee in his, the tops being used as plates. There are no scraps and there is no waste. In the new equipment his provision cannister is made of aluminum; it is carried on top of the knapsack; there is no haversack. The total weight of each man's equipment pack and piece is sixty pounds. The knapsack is made of horse-hide, with the hair on, and is water-proof; in this the soldier carries one extra pair of shoes, two extra pairs of socks or foot bandages, one brown linen fatigue suit, one overcoat, shaving materials, soap, towel, needles and thread, a lump of tallow, fifty rounds of ammunition, a pound of bread and what conserves he may have issued to him. The shelter tent is rolled and attached to the knapsack. No blanket roll, slung from shoulder to hip, is allowed. There are three grades of sick rations: For the very sick special diets; for those not so ill a soup or stew like heavy broth, containing meat, with rice and vegetables; for convalescents, strong supporting diet of roast or baked meat, with potatoes, onions, etc. The medium sick and convalescents receive an issue of claret equivalent to half a pint of burgundy twice daily; for the very ill spirits may be obtained, but only on the doctor's order. There is no such thing as a sick call in the German army; if an enlisted man feels ill or seems to be unfit for duty it is reported to the first sergeant of his company. If on inspection the sergeant finds the man to be in need of medical care, if the case be in the barracks, he is retained in quarters until the medical officer makes his daily rounds, morning or afternoon; if in the field he is picked up by a hospital bearer and taken to the field hospital. The record is kept by the first sergeant, and the man continues to be borne on the company strength, but as "off duty;" when he is returned he is simply marked for duty on the company books; the time that he has been away is stated as "in the hospital." Tentage is small in amount; requisitioned quarters in the nearest village being always used, the Germans having a saying that their worst quarters are better than the best bivouac. They never use canvas when they can get the tight roof of a house. The feet of the soldiers are most carefully considered, each man's feet being inspected by one of his company officers at least twice a week in barracks and oftener in active field maneuvres. The inspection officer searches carefully for strained tendons, blisters, improperly cut nails or untrimmed corns; at the same time each man's socks and boots are carefully in-

spected as to the condition of cleanliness. The entire body of each man is inspected every thirty days by a company and a medical officer, careful search being made for heart lesions, herniæ, venereal disorders, skin diseases, etc.

CORRESPONDENCE

FADS IN THE STUDY OF EPILEPSY.

To the Editor of the MEDICAL NEWS:

DEAR SIR:—Receiving no reply to my letter of January 23, 1900, asking of you the author of the editorial in the NEWS of January 23, 1900, entitled "Fads in the Study of Epilepsy," I wish to record this protest against what appears to me manifest injustice on your part.

I complain that you, the editor of a presumably fair and reputable medical journal, should open your *editorial column* to an unscientific and undignified personal attack such as the article in question proves to be, thus sheltering its author by the anonimity of an editorial.

Very sincerely yours,
A. P. Ohlmacher, M.D.

The Ohio Hospital for Epileptics,
Gallipolis, O., January 31, 1900.

[We regret extremely that Dr. Ohlmacher should have construed the editorial in the MEDICAL NEWS of January 20th as a personal attack upon him, for such was not the intention. No one carefully weighing the mass of yearly literature upon epilepsy can fail to appreciate that many of the authors do not grasp the epileptic phenomena in their entirety, and, as a consequence, tend to draw unwise and unwarranted conclusions from insufficient data. For the sake of maintaining a reasonable sanity of judgment upon these subjects among those readers of the NEWS who do not give especial attention to the convulsive disorders and their allied neuroses, we consider an occasional *résumé* of epileptic literature essential; we published the editorial in question in this connection. With apologies to Dr. Ohlmacher for the unintentional, possible injury to his personal feelings by the Juggernaut of scientific criticism, we submit that there is no adequate evidence in the editorial in question proving it unfair or unscientific.—ED.]

KIRKES' HANDBOOK OF PHYSIOLOGY.

To the Editor of the MEDICAL NEWS:

DEAR SIR:—In 1896 I had to call attention to the fact that Messrs. Wm. Wood & Co. of New York were publishing an unauthorized edition of Kirkes' well-known "Manual of Physiology."

I have recently obtained a copy of the fifteenth edition of their work bearing date 1899, and having on the title page the names of Mr. Morrant Baker and Dr. Vincent Harris as editors.

The facts are as follows: Mr. Morrant Baker (who is now dead) and Dr. Vincent Harris gave up the editorship of the genuine work four years ago, and even before that time Messrs. Wood never had permission to use their work or their names. Since 1895-6 Professor W. D. Halliburton has been sole editor of the hand-book: he has almost rewritten the work from beginning to end, although Kirkes' name has been retained.

One of the special features of our book is a series of colored illustrations of blood-corpuscles, blood-crystals, etc. These together with many alterations and improvements, both in cuts and text, which have been introduced by Professor Halliburton, have been adopted by Messrs. Wood without any acknowledgment of the source whence they were derived, and in the teeth of a protest by Professor Halliburton and myself (who am the proprietor of the book).

Not only have Messrs. Wood "conveyed" a large amount of Professor Halliburton's original work, but they have also issued their book under the names of Mr. Morrant Baker and Dr. Vincent Harris, who have nothing to do with it.

I think it is but right that I should again call the attention of the American medical profession to this glaring and persistent case of literary piracy, for the present United States law gives me no other redress.

The only authorized and complete edition of Kirkes' Physiology sold in America is that published by Messrs P. Blakiston's Sons & Co. of Philadelphia in conjunction with my firm.

John Murray.

50 Albemarle Street, London, W., February 8, 1900.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, February 10, 1900.

DEFICIENCIES IN THE ARMY MEDICAL STAFF—MENTION OF MEDICAL OFFICERS IN DISPATCHES—DISTINGUISHED HOSPITAL OFFICIALS—ANOTHER LEGACY FOR LONDON HOSPITALS—THE LATE SIR T. GRAINGER STEWART.

THE extent of the much talked of shortage in the membership of the Army Medical Corps is being slowly but significantly revealed under the pressure of actual hostilities. The Secretary of War, in reply to a question in Parliament, had to admit that almost half the entire number of officers enrolled were now serving in South Africa, leaving only about 350 surgeons for the wide range of all other foreign stations and barely 110 at home. No less than 161 civilian surgeons were already employed in South Africa, and their number will have to be considerably increased ere long. In other words, almost a third of the army surgeons in the field have been drawn directly from civil practice. Moreover, at home nearly one-half the duties of attendance upon troops in garrison and hospital are being performed by civilian practitioners.

To make matters worse, the militia are now being called out for service, and, as the *British*

Medical Journal points out, the Medical Staff Corps of this arm of the service has, incredible as it seems at first sight, to die out almost completely under the well-known fostering care extended by the War Office over things medical. From 250 officers its numbers have shrunk to 24, thus giving one surgeon to each 5000 men of the force! This deficiency, of course, will have to be supplied almost at once, as the force is being called out for service. The combined Army and Militia Medical Corps has dwindled from some 1300 officers forty years ago to barely 900 now, while the size of both forces and the extent of their distribution have greatly increased. If this be a fair sample of the interest taken in the Medical Service by the War Office, is it any wonder that medical officers bitterly complain of the drawbacks and many unpleasantnesses of their position? That the profession at large are thoroughly aware of the facts of the case and resent the attitude of the authorities is significantly seen in the fact that even now, when a tardy and ludicrously inadequate attempt to fill up the ranks is being made by offering thirty commissions (against a shortage of 400) only 25 suitable candidates have presented themselves! And yet there are hundreds of volunteers for medical service at the front by direct appointment. Evidently radical reforms in the Army Medical Corps will be absolutely necessary before the authorities can bring it up to its full complement again.

The mention of medical officers in the dispatches from the front for distinguished services compensates somewhat for the shortcomings of the military authorities. Within the past week four or five army surgeons have been highly commended in the reports of generals-commanding. General Lord Methuen speaks of the splendid manner in which the battlefield of Belmont was cleared of its wounded as "the most perfect work I have ever heard of in war, reflecting the highest credit upon Colonel Townsend." The triumphs of organization by the same medical officer at Enslin and at Modder River are also praised. General Methuen is so delighted with the care taken of the wounded that he says he is glad to have been slightly wounded himself in order to be able to see personally how skilful and assiduous this service is. Colonel Paget especially mentions Captain Moores, "who, although wounded in the hand, said nothing but continued his duties." General Hildyard commends the good service of Major Ricketts in removing the wounded from Beacon Hill. Finally, in his great speech a few days ago in the House of Commons, in defence of the war policy of the Government, Mr. Chamberlain paid a high compliment to the efficiency of the Army Medical Corps. Cynics, of course, may suggest that both the generals and the Hon. gentleman were only too glad to find some part of the conduct of the campaign which they could conscientiously and safely praise, but the fact remains nevertheless that the value of the services of our profession has at last been publicly and officially recognized.

The same week that sees Conan Doyle depart for the front with the Langman field-hospital will probably witness a member of Parliament starting as manager of the American (Van Alen) hospital. This is Mr. Guthrie Murray, representing the borough of Ban, and he has just bade farewell to his constituents in a speech in which he said that he had months ago offered his services to the Secretary of War in any capacity most useful, and he could conceive of none more useful than this. He had special pleasure in taking part in such a substantial and generous embodiment of American sympathy and philanthropy, whose donor, Mr. Van Alen of New York, deserved the gratitude of the British nation. The cost of the hospital he stated at $100,000. Both this and the Langman hospital are made up of tents especially suited to rapid changes of position, and are going directly to the front for use on, or as near as possible to, the field of battle. The manager of the latter hospital will be Lieut. Archie Langman, the son of the donor.

Rudolph Zunz, a wealthy metal merchant of Wimbledon, has just left an unusual form of legacy to several of the London hospitals. This is a specific allotment of $125,000 for the establishment of a ward in whichever of the hospitals his executors may choose, in memory of his wife. This is to be known as the "Annie Zunz Ward," and a specified life-sized photograph of his wife is to be hung upon its walls. The final residue of his estate is to be used to establish as many similar wards as its amount will permit. As this residue bids fair to reach the handsome sum of $400,000 several hospitals will benefit by this touching and most grateful display of devotion to the memory of his departed wife.

The death of Sir Grainger Stewart removes one of the most brilliant names from the list of the English profession. As years are counted on this side of the Atlantic he died comparatively young, being barely 62 years of age, but when we remember that he was handicapped in boyhood with a cardiac defect following rheumatic fever and consider the mass of valuable work accomplished and roll of triumphs won, we are astonished that even his indomitable spirit should have sustained him so long. Another attack of acute rheumatism still further damaged his heart in 1882, and, as in so many other cases, the beginning of the end was brought about by the influenza epidemic of 1891. This seriously disturbed the cardiac innervation, since which his condition has been almost constantly a source of anxiety to his friends.

His history seems to indicate that the great physician, like other geniuses, is born rather than made, for he was scarcely 25 when he published a paper upon the forms of nephritis, which has passed into classical literature, and at 22 he brought out his great work on "Bright's Disease of the Kidney," which made him famous. Beginning his career in Edinburgh as a lecturer in Materia Medica, he passed from this to Pathology and, after seven years' hard labor and brilliant

results, to Clinical Medicine where he shone for so many years. He was great in everything he touched and a living disproof of the popular sciolist theories about the insanity of genius or even its one-sidedness. His greatest success, however, both as a diagnostician and a teacher, was his power of going to the heart of things at once, disregarding the unimportant symptoms of a case to seize upon the vital, sweeping away all the trivial details of a lecture-subject and bringing out its essentials in bold relief. This and his unremitting and incessant industry, were the secrets of his success. He was as warmly beloved personally as he was admired for his scientific attainments and his loss is keenly felt by the entire English profession.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

SO-CALLED PERNICIOUS DYSENTERIC FEVER—ARREST OF DEVELOPMENT AND ITS TREATMENT—SURGICAL TREATMENT OF ABSCESS OF THE LIVER—HYDATID CYSTS OF THE LIVER AND DELBET'S METHOD OF TREATMENT—THE QUESTION OF GLANDULAR INFECTION IN CARCINOMA OF THE STOMACH—MORE UNUNITED FRACTURES HEALED BY THYROID EXTRACT—COURTESY OF CHINESE COACHMEN AND THAT OF FRENCH SURGEONS—EDEMA ANTHRACIS—PLEURISY DUE TO TYPHOID BACILLI—ALARMING DEVELOPMENT OF TUBERCULOSIS AMONG NEWLY ARRIVED COUNTRY PEOPLE IN PARIS—THE PLACE OF CALOMEL IN THE TREATMENT OF SYPHILIS—DESTRUCTION OF THE LARVÆ OF MOSQUITOES.

AT the Academy of Medicine, January 2d, LAVERAN discussed a work of Kanellis and Cardamitis of Athens upon pernicious dysenteric fever. These authors state that dysentery and malaria are often found as complications of one another, the anemia and weakness which one produces predisposing to the contraction of the other. Laveran said many facts show that when malarial fever and dysentery coexist in the same individual they aggravate each other. Numerous symptoms which have been atributed to "attacks of pernicious dysentery" may be explained by an attack of malarial fever coming on in a patient who has dysentery. The true nature of such attacks can only be known if the blood is examined. The absence of hematozoa enables one with certainty to eliminate the diagnosis of malaria. Moreover, such a patient will generally not have a history of malaria; the spleen will be found of normal size or even smaller than normal, and the attacks will not yield promptly to quinine as they would if they were of malarial character. The term "pernicious dysenteric fever" ought to be crossed from the list of pernicious fevers. There is no such thing as a dysenteric fever developing directly under the influence of hematozoa, but simply dysenteries complicated by attacks of malaria.

SPRINGER spoke of arrest of development of the child and its treatment. Development may be arrested by dyspepsia, hepatic congestion, insufficient thyroid action due to infectious disease, the abuse of alcohol or food, etc. Among the means which are capable of stimulating the growth of the body he mentioned the removal of the adenoids (useful in certain cases only), Swedish gymnastics, continuous aeration, saline medication, and hydrotherapy. But the most important rôle is played by the epiphysial cartilage of the lower end of the femur. He has proved that in case of arrested development, local excitation of this part will awaken physiological activity and stimulate the growth. Growth takes place by thrusts forward. It takes some time for it to show itself anew after a period of repose. To accomplish these results the knees may be wrapped with compresses wet with bitter saline waters. Friction and massage are also useful, but the best treatment is that by electricity. Galvanic, faradic, and static electricity may all be used with benefit, but a combination of static electricity with faradization of the muscles which surround the lower end of the femur produces the most rapid results. The speaker also alluded to the good effects of decoctions of the cereals on the development of the body and of the waist.

PINARD, January 16th, mentioned an instance of vicious insertion of the placenta. There was a tongue-like process of the placenta which extended from its lower margin across the mouth of the uterus. Other than by this process the placenta was not a placenta previa. When such a process exists it is usually said to be atrophied, but such was not so in this case. On the contrary, it was even thicker than the rest of the placenta.

At the same society, January 23d, LUCAS-CHAMPIONNIERE spoke of the surgical treatment of abscess of the liver. A soldier of Algiers was taken ill with violent pains in the epigastrium, vomiting and a high fever, compelling him to remain in a hospital three months. Eight months later he had a second attack more severe than the first, and aspiration showed an abscess of the liver to be present. After resection of the ninth and tenth ribs posteriorly, the abscess was opened and two liters (quarts) of pus escaped. The cavity was lightly irrigated with peroxide of hydrogen and two rubber drains were placed in it. In spite of the late stage at which this patient came to operation, his complete recovery seemed likely at the time of the report. In opening an abscess of this character it is well, if possible, to avoid opening the peritoneal cavity. While the pus itself may be sterile, it is always a good medium for the growth of bacteria. For incising the liver, a thermocautery is preferable to the knife. It consumes more time but reduces the loss of blood to a minimum.

At the Society of Surgery, January 10th, QUENU discussed the treatment of hydatid cysts of the liver. It seemed likely that a cyst treated according to the method of Delbet, by closure without drainage, must fill up with bile. Some-

times when such a cyst is drained, enormous quantities of bile flow out into the dressings, even although there be no infection; and the reduction of pressure which follows a simple aspiration will sometimes result in a transudation of bile. However, it can be said that the transudation of a serous fluid does not interfere with cicatrization. Quenu treated five cases of hydatid cyst without drainage, applying a simple suture in three instances, and a suture in layers in two. Three times a secondary infection interfered with the recovery, due, as he believed, not to any error in technic but to the transudation into the wound of septic bile. He would not be quoted as an opponent of Delbert's method of suture without drainage, but thinks that this plan should be reserved for simple cases in which the general health of the patient is good, and there is no danger of biliary infection.

HARTMANN said that he had twice operated by Delbet's method with complete success, but thought that it should never be used unless the operator can see every part of the inside of the cyst. If he could not do this he could not be sure that there was not some pocket left which still contained some hydatid material. It frequently happens that an apparently clean cyst cavity will after a few days discharge such material.

GERARD-MERCHANT said that he had operated fourteen times upon hydatid cysts by the usual methods with complete success. Many of the patients were, however, slow in recovering, and he therefore tried immediate suture upon the last patient, but put a drain in the abdominal cavity. This he regretted, as it simply delayed the recovery of the patient and served no good purpose.

POTHERAT said that Delbet went too far in claiming that hydatid cysts ought never to be treated by marsupialization. The evils of this open method of treatment are far less now than they were in the days before antiseptics were known, and it is at present quite possible to treat a hydatid cyst of the liver in this manner, and have it heal up in two or three weeks. The danger of Delbet's method lies in the fact that one cannot be sure suppuration will not follow, no matter how careful he may be in his technic.

DELPET took up the question of glandular infection in carcinoma of the stomach. Here, as with all epithelial cancers, the metastases form rapidly. This ability of the epithelial cells to grow and multiply in the lymph spaces of connective tissue is characteristic. In benign epithelial tumors, such as the dermoid cysts, the epithelial cells live in some sense in an encysted state. This peculiar property of the epithelial cells of cancer has a direct bearing on the parasitic theory of cancer. So far as known the cells of no psorosperm will invade the lymphatic spaces, and, if cancer is due to a psorosperm, it is necessary to attribute to these organisms properties different from any that they are at present known to possess.

TUFFIER said that it is not always possible to remove all the affected glands in a case of cancer of the stomach. He performed a pylorectomy upon a female patient, removing, as he thought, all the infected glands. For two years the patient was apparently cured. Then a further growth of the tumor became manifest behind the duodenum, for which gastro-enterostomy was performed to give temporary relief.

POTHERAT mentioned two additional cases in which ununited fractures were cured by the use of thyroid extract. Both patients had sustained fracture of the leg, and in each the union became complete in from twenty to twenty-five days after the administration of the thyroid extract was begun.

At the annual meeting of the Society of Surgery, January 31st, S. POZZI, the President, in the course of an address told the following anecdote: "Heinrich Heine relates that in China, where two coachmen of the Celestial Empire meet in a narrow road and the wheels of their vehicles become entangled, they do not lose their tempers and swear, but, dismounting, they bend the knee and bow several times, and then together they labor to separate their wheels. When this is accomplished they again make obeisance, remount their carriages and drive on. . . . My dear colleagues, let your learned discussions be at least as courteous as the common conflicts of the Chinese coachmen."

At the Medical Society of the Hospitals, January 12th, THOINT mentioned the case of a shepherd who was bitten by an insect in the upper eyelid. The immediate result was a painless white induration, but the swelling gradually spread over the face and forehead, and became violet. The symptoms were such that the man's death was expected, but he finally recovered. On account of the situation of the trouble no incisions were made, but the parts were simply kept covered with compresses wet with bichloride of mercury solution. The lesion did not suppurate but a dark serum could be squeezed from it, which produced no effect upon animals into which it was injected. Despite this fact and the fact that the patient recovered, the trouble was looked upon as an edema due to anthrax, especially as anthrax existed among the sheep of a farm close by the pasture in which the shepherd was employed.

SOUQUES mentioned at the meeting of January 19th two cases of pleurisy due to the bacillus of typhoid fever. These pleurisies appeared in the first week of the typhoid, and were preceded in one instance by a bronchitis, and in the other by a broncho-pneumonia. The pleuritic fluid in each case was bloody, and in one case it became purulent and afterward again bloody before it was entirely absorbed. Recovery of both patients followed without the performance of thoracentesis. The pleuritic fluid in these cases did not possess agglutinating powers, as has sometimes been the case with fluids similarly obtained. This difference in reaction cannot at present be explained.

BARBIER called attention to the interesting fact that two-thirds of the tuberculous patients who applied for relief at the various hospitals and dispensaries of Paris were born not in Paris but in the provinces; and that more than a third of these immigrants to the city had contracted the disease during the first six months of their urban life. As very few of these patients gave a history of tuberculosis in their families, contagion was responsible for almost all of the disease. Doubtless alcoholic habits and bad or insufficient food had made the victims especially prone to infection.

SIREDY said that in his observation immigrants from Breton, Savoy and Auvergne were especially liable to contract tuberculosis; and that the unhealthful state of the dwellings in which these people lodged on their arrival in the city was favorable to the spread of the disease.

At the Society of Dermatology and Syphilography, January 11th, DANLOS showed a patient who, as a result of syphilitic iritis, had nearly lost his sight. For two years he had been treated in different hospitals without benefit, having received in one of them thirty injections of mercuric biniodide. When first seen by Danlos he had a marked mercurial stomatitis. After two weeks' rest from treatment, injections of calomel were begun, with the striking effect of almost completely restoring the lost sight, although only four injections were made.

FOURNIER said that calomel in certain cases has a wonderful effect. Certain rebellious lesions of the tongue and larynx and certain cases of phagedenism yield like magic to calomel, although they have resisted all other forms of mercury. But at other times calomel fails under circumstances in which the soluble salts of mercury or the proto-iodide will be successful. Recognizing the terrible pain which is caused by the injections of calomel, one ought to reserve this method of treatment for those cases in which milder measures have failed.

At the Society of Biology, January 20th, PHISALIX spoke of the destruction of the larvæ of mosquitoes, a problem which has assumed great importance since it is known that they are agents in the spread of malaria. The best means thus far tried to accomplish this end is the pouring of coal-oil on the surface of ponds. This method has been carried out with success in America, where it has been found that one-half ounce of oil is sufficient to kill the larvæ of a square yard of water. The death of the larvæ is caused by the introduction of the oil into their tracheæ. The most favorable season in which to make use of this means is the spring-time.

Treatment of Psoriasis.—

℞ Acidi salicylici.....gr. xlv
Ichthyol .....ʒiis
Acidi pyrogall.....ʒiss
Lanoline .....q.s. ad. ℥iii
—*Brocq.*

SOCIETY PROCEEDINGS.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held Thursday, January 18, 1900.

The President, William H. Thomson, M.D., in the Chair.

Myocarditis.—The paper of the evening on this subject was read by Dr. John H. Musser of Philadelphia. This will appear in a subsequent issue of the MEDICAL NEWS. Dr. Henry Koplik then read a paper entitled "Myocarditis in Infants and Children," which will also appear in the MEDICAL NEWS.

Diagnosis.—Dr. Janewav said that despite all the study that has been devoted to the subject the diagnosis of myocarditis still remains a most difficult problem. It has been said that there is a facies myocarditica, and that the diagnosis can be surely made from the patient's face. Most consultants have seen patients who had been assured by experienced physicians that they had no heart disease, yet who have proved on careful examination to be suffering from serious forms of myocarditis. Some such cases serve to show how absolutely unsuspected the cardiac lesion may remain despite repeated examination. Not long ago a man was seen who had developed some time before, as a consequence of slight overexertion, a good deal of difficulty of breathing. There had been a fire in his store and this had led him to run around a good deal more than he had been accustomed to. Physical examination disclosed to the doctor whom he consulted the fact that there was fluid in his right chest. He was told that he had tuberculous pleurisy and that he must leave this climate. His physician was a distinguished diagnostician who had written a book on diseases of the chest and lungs. The patient's heart was pronounced to be normal. He went to Colorado, but experienced no relief, on the contrary his symptoms became worse. On his return from Colorada he was seen by another specialist who had also done some writing on this subject. He, too, also failed to find any heart lesion. Twenty times his thorax had to be aspirated for the continually accumulating right hydrothorax due to his weak heart action. In another case seen not very long ago there were no murmurs present and no symptoms of any lesion of the valvular mechanism. The heart-sounds were feeble and rather characteristic of the presence of myocarditis. The first sound was short and valvular in character, resembling very much the normal second sound. There was the tick-tack that is typical of a greatly weakened heart muscle. Dilatation could be demonstrated and there was enfeebled circulation. Albumin and casts were absent. Finally, as the result either of brain anemia or of some autotoxemia, the patient became delirious and a neurologist was called in. He found traces of albumin in the urine and said that the whole train of symptoms had been due to

chronic Bright's disease. The case went on to a fatal termination and autopsy was secured. The heart was found dilated and contained a number of myocarditic lesions. There was a thrombus of the left ventricle more than half filling the cavity. This, of course, developed towards the end of the case and showed the reason for the marked disturbance of circulation which preceded death. In two other cases that have been recently under observation, hydrothorax was the primary symptom. The text-books usually say that the hydrothorax due to myocarditis, or to any heart lesion, occurs on both sides. It will often be found, however, to develop on only one side.

Bacilli and Tuberculosis.—In a recent case in which the autopsy showed that here was a syphilitic myocarditis and a periarterial gumma around the aorta, compressing the coronary arteries and so leading to further diseases of the heart muscle, the diagnosis of tuberculosis was made. The main physical symptom on which the diagnosis was based was the presence of a one-sided hydrothorax, which was thought to be a consolidation. After repeated examinations a few tubercle bacilli were found in the sputum and the patient was, therefore, sent to Mexico. After death absolutely no signs of tuberculosis were found in the lungs. There was, however, a distinct heart enlargement consisting of hypertrophy and dilatation with considerable myocarditic degeneration. The case brings up the important question of the diagnostic value of a few tubercle bacilli that may be found after repeated examinations. It is so easy to make some little slip of technic, which, because of their universality, will introduce tubercle bacilli from without, that it is always well to have a single such observation confirmed by further investigation. A distinguished bacteriologist who heard not long ago of a number of examinations having been made in a laboratory for the purpose of finding tubercle bacilli in the blood, the result of all of the examinations being negative, said that he was sorry for the laboratory. Under such circumstances of repeated examination a bacteriological error will almost surely creep into some observation.

Angina and Pseudoangina.—It is a matter of not a little surprise how many experienced physicians are led to make the diagnosis of dyspepsia when the condition is really an angina due to serious degeneration of the heart. A very striking case of this occurred not very long ago. The patient was a physician and the consultant who was called thought that the anginoid symptoms could all be attributed to dyspepsia because they occurred most frequently after a hearty meal. It was apparently forgotten that a stomach distended by the presence of food presses up against the diaphram and through it on the heart and so may hamper the heart action. When the heart itself is diseased, this hindrance of its function may readily set up the series of symptoms that we know as angina pectoris. Very often in these cases it is not so much a mistake of diagnosis, as the disinclination of the family physician to pronounce the case one of serious cardiac degeneration so long as there is any ground to think that it may be only functional in character.

Anatomical Division of Myocarditis.—Dr. Adler said it was the custom not many years ago to divide myocarditis from the anatomico-histological standpoint into interstitial and parenchymatous. In the interstitial form it was the connective tissue lying between the muscle fibers and around the blood vessels which was supposed to be affected. Proliferation took place in these tissues with gradual degeneration of the muscle fiber itself and the production of the large so-called fibroid heart. In other cases it was the muscle fiber itself which first degenerated and then an overgrowth of the connective tissue took place to supply its place as it were. Further experience and careful examination of hearts in various stages of myocarditis show that no such hard and fast lines can be drawn. Even very early in myocarditis both processes, the degeneration of the muscle fiber and the proliferation of the connective tissue, will be found to have taken place. There are some forms of myocarditis, such as the syphilitic, which we know begin in the connective tissue, but degeneration of the muscle fiber itself soon sets in to complicate the process. In fatty degeneration in simple atrophy and in brown atrophy of the heart, proliferation of the connective tissue can be found even at very early stages. Many and many a case of myocarditis is discovered only at the autopsy. Some give no symptoms during life, or, owing to complications, the symptoms are not significant enough to call attention to the heart condition present. One reason for this is that the heart muscle fibers are never entirely and uniformly degenerated, but patches of degeneration occur here and there. The healthy portions of the heart continue the work of the whole heart, although under unfavorable conditions, of course. When no macroscopic signs of myocarditis are present, they may be often found with the microscope. These microscopic lesions will sometimes serve to explain symptoms that were obscure during life.

It is becoming more clear from recent observations that not all parts of the heart are of equal functional value. When certain parts are degenerated there is much more disturbance of function than when degeneration occurs in other parts. When of two hearts one is much more degenerated than the other it may yet retain more of its functional usefulness because vital spots have not been affected by the degenerative process. Dr. Musser has called attention to the fact that the capillary muscles form one of these important parts of the heart. When degeneration occurs in them there is much more interference with heart action than if the same amount of degeneration occurred in the wall of the ventricle. There seems no doubt that the auricles are much more important in this respect than has been imagined. Dehio showed that fibrosis of the auricles is of much more frequent occurrence than was formerly supposed and that it is an extremely impor-

tant lesion so far as regards the functional integrity of the organ. The resultant loss of compensation is more than might be expected from the impairment of function of the auricles themselves. With reference to fatty degeneration of the auricles Delio's observations have been confirmed and further amplified. Pulmonary edema is especially a result of myocarditis of the auricles. The ventricles may be proportionately more degenerated than are the auricles without the production of as serious symptoms.

Arterial Sclerosis.—Arteriosclerosis is usually considered a result of senility. As observations have become more and more searching, however, we have learned that it may occur also among those who are comparatively young. There are certain individuals who have a tendency to the development of arteriosclerosis in early mature life and who have also a marked tendency to myocarditis. One of the principal factors in the development of this tendency seems to be an abuse of tobacco. Considering how harmless the use of the weed is sometimes said to be, it is wonderful how many cases of early arterial sclerosis are associated with its abuse. Syphilis is another prominent cause of precocious arteriosclerosis. Heredity plays a very important rôle in the matter. In many patients in which distinct arteriosclerosis occurs before thirty years of age heredity will be found to be the main etiological factor. There are families in which at a certain period arteriosclerosis with certain cardiac changes are almost sure to appear. This may not occur before fifty or sixty, but they may occur at much earlier periods in life.

In closing the discussion, Dr. Musser said that he regretted that he had not declared as forcibly as he might have done the fact that myocarditis may exist without presenting the slightest symptoms during life. While the characteristic facial expression of patients suffering from myocarditis is one of the best differential symptoms of the disease, it is by no means always present nor was it his idea to present this symptom as one to be found uniformly. In the cases in which unsuspected myocarditis exists, there occur the fatal pneumonias and the fatal terminations of other infectious diseases in persons whose age and general appearance might lead one to think that there was every reason for them to survive the attack. Dr. Musser said that he was glad Dr. Janeway had called attention to the fact that hydrothorax frequently develops during myocarditis and that it is sometimes one of the first symptoms to which the physician's attention is directed. He was especially pleased that Dr. Janeway should call attention to the frequent existence of unilateral hydrothorax in these cases. Some time ago under the direction of Dr. Musser at the Philadelphia Hospital, Dr. J. Dutton Steele, in an article published in the *University Medical Magazine*, very thoroughly reviewed this subject. In a majority of the cases where unilateral hydrothorax occurs the condition is found to exist only on the right side. Dr. Steele found that this was due to the fact of the anatomical relation of the enlarged auricles to the veins of the thorax and especially of the lungs. The pressure exerted by the auricle on the veins is sufficient to interfere with the return circulation and in this way cause the exudation of serum into the pleural cavity of the left side.

HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

Regular Monthly Meeting, Held January 27, 1900.

The President, Henry C. Coe, M.D., in the Chair.

Pain Pathognomonic of Ectopic Gestation was the paper of the evening and was presented by Dr. Henry C. Coe. It will appear in a subsequent issue of the MEDICAL NEWS.

In discussion Dr. Egbert Grandin said that the symptoms of tubal gestation are by no means so characteristic as might be gathered from reading the account of the condition in the ordinary textbook. A recent case seen by Dr. Grandin will serve as a very good illustration of this fact. The patient entered the hospital with symptoms of chronic endometritis and the history of sterility for a number of years. For the endometritis a curettement was suggested. During the operation the curette slipped away from the doctor's hands with the horrible sensation, which practically every gynecologist has had at some time or other, and which indicates that the instrument has perforated the uterine tissues. In order to be sure that no serious harm was done a laparotomy was performed, when it was found that the curette had only entered the subperitoneal space and had not penetrated the peritoneal cavity. An examination of the adnexa showed that the left tube was strictured at several points. In one of the sacculated distentions of the tube an ovum was found. Chorionic villi were demonstrated microscopically in this so that there was no doubt of the diagnosis. The woman had been married for a number of years. There was absolutely no history of menstrual irregularity. She had no idea herself that she had been impregnated. In fact a feeling of almost hopeless sterility had come over her. The accident of the curette perforating the uterus was really a most fortunate one for her. Had her condition been allowed to progress it is very probable that a rupture would have occurred after two or three weeks and a fatal result would have been almost inevitable. It may have been the existence of the extra-uterine pregnancy which caused the uterine tissues to be so succulent and non-resistant that they were easily penetrated, for no more force was used during the curettement than is usually employed. The case serves to illustrate very well the insidiousness with which extra-uterine pregnancy begins and develops. Despite the clear-cut indications given by the text-books there is no group of symptoms pathognomonic of the condition and none that more than suggest the existence of the

condition. At best, the diagnosis is a surmise and not a settled thing.

Thirty Cases of Extra-Uterine Pregnancy.—Dr. Grandin has seen altogether thirty cases of this condition. Curiously enough, six of them were seen during recent years in consultation with a physician who said some years ago that he had not seen a single case of extra-uterine pregnancy, nor one in which he suspected the existence to be present, in his private practice notwithstanding all that has been said about the frequency of the condition and the number of cases that were being cited and discussed by gynecologists.

Diagnosis of Extra-Uterine Pregnancy.—In 50 per cent. of these cases there was a history of preceding pelvic disease. Nearly always the Fallopian tube was found at operation to be strictured at one or more points. In 80 per cent. of the cases there was severe abdominal pain. This was practically always colicky in character. One patient described it very vividly as being similar to the pain which she remembered having experienced after eating green apples when young. In many of the cases no coincident enlargement of the uterus could be found even after the most careful bimanual examination, although the textbooks set this down as an almost invariable symptom. Irregularity of menstruation nearly always precedes the occurrence of extra-uterine pregnancy. The normal menstruation lasts four to five days; then a period occurs which lasts only from one to two days, followed by others which last from seven to eight days. The rule seems to be for a relative diminution of the amount of flow to occur, followed by a comparative menorrhagia. In 90 per cent. of the cases there is either amenorrhea or the irregularity of menstruation just described. One symptom seems to be invariable, *i. e.*, a mass can always be found on one side or the other of the uterus, or behind that organ.

Mistakes and Complications.—The most usual source of error is a pyosalpinx, or an ovarian abscess. In eight cases in which operation was done extra-uterine pregnancy had been suspected, but a suppurative condition of the tube or ovary was found to be the cause of the symptoms. In one case they were due to appendicitis. In one patient, a single woman of thirty-eight, who was operated on for multiple fibroid, a pyosalpinx was found on one side and an unruptured tubal pregnancy on the other. Had there been a rupture of the gestation sac in this case diagnosis would have been extremely difficult, as the respectability of the patient was beyond all question. In one case in which after operation a double tubal pregnancy was found, one ruptured and the other unruptured, the patient did not think that there was the slightest reason to suspect pregnancy.

A Diagnostic Sign.—The finding of a mass in the pelvis is the most important symptom of extra-uterine pregnancy. The nature of the pain may lead one to suspect this condition, but the rounded, congested, mass felt in the vagina, with vessels pulsating, and atypical hemorrhage should cause one to insist on an examination under anesthesia. These symptoms always justify a posterior vaginal section if after examination under an anesthetic there still remains doubt. If free blood is found in the peritoneal cavity the diagnosis of extra-uterine pregnancy is practically assured. Operation may then be done from below if the operator considers it advisable, although Dr. Grandin's own preference is usually for laparotomy.

Cause of Pain.—The disputed point as to the origin of the pain in extra-uterine pregnancy has always been a subject of great interest. It seems to be due to hyperdistention of the tube, followed by slight rupture. The whole thickness of the tube may not give way at once, but certain fibers may be torn, and small vessels torn across, and finally, a complete rupture of the tube takes place. This intermittent tearing process seems to be the origin of the repeated attacks of pain. When such pains occur, if extra-uterine pregnancy is suspected, an examination under anesthesia should be demanded.

Appendicitis and Ectopic Gestation.—Dr. Brewer reported a rare combination of these two serious conditions. The patient was admitted to Charity Hospital complaining of a good deal of pain and a mass on the right side was plainly to be felt. The case was thought to be one of pelvic abscess and the course of it for a time seemed to justify that diagnosis. There was some improvement in the symptoms for three or four days and the patient seemed to be going on to recovery although the mass did not lessen in size. One day there was a sudden change for the worse. There were severe colicky pains, the temperature ran up to 103°F. and the pulse to 120. A posterior vaginal incision was made and blood was found free in the abdominal cavity. Laparotomy was done and an extra-uterine pregnancy was found. Rupture had occurred some time before and the extravasated blood had found its way up along the cecum and was firmly clotted. In the center of the clot a ruptured appendix was found. It was the rupture of the appendix which had caused the most recent symptoms and the organ was removed with the tumor of the extra-uterine pregnancy. The patient made a good recovery.

Importance of Pain.—In closing the discussion, Dr. Coe said that he had selected pain as the symptom of extra-uterine pregnancy most worthy of discussion because it was the one on which the most emphasis has been laid. In his experience there has been only infrequently a history of menstrual disturbance except that a period is skipped. Patients usually think that they are normally pregnant. The condition that is most hard to differentiate is incomplete abortion when complicated by tubal or ovarian disease. This has given rise to a series of reported mistakes and always requires the most careful consideration when making the diagnosis. In a recent case a very nervous woman who, after having been married for two or three months, missed a period

and then had a grumous discharge from the vagina. She complained of a great deal of pain. Examination disclosed the fact that there was some enlargement of the tube on one side. A diagnosis of tubal pregnancy was made, but operation showed only incomplete abortion and salpingitis. The tumor is a most important symptom, but alone it can not be held to be of a very great significance. An abscess of the tube or ovary may pulsate in a way that simulates very closely the tumor of an extra-uterine pregnancy. The only way to decide that it is not an incomplete abortion with which one has to deal, is to curette gently, and if decidua are found the diagnosis is settled. To operate and find that the patient is only suffering from an incomplete abortion is a very trying situation in which a number of gynecologists have been placed. The difficulty of the decision is, however, so great that it would almost seem worth while to risk an occasional mistake which, after all, can have no serious consequences than to fail to operate upon a real case of extra-uterine pregnancy until too late.

Anuria for Ten Days.—Dr. Grandin reported a unique case of this kind occurring in his service at the Columbus Hospital. The patient had been weakened by menorrhagia due to the presence of a fibroid tumor. This was of the submucous variety and was so large that it completely filled the cavity of the uterus and rendered curettage impracticable. The patient had a diseased heart, was anemic, and suffered from parenchymatous nephritis. The vagina being very small and the tumor large supravaginal hysterectomy was decided upon. The woman's kidneys being diseased it was decided, although with some misgivings because of the condition of her heart, to use chloroform as the anesthetic. After the patient had been under chloroform for about twenty minutes, the house-surgeon became alarmed and substituted ether. The woman was under ether anesthesia for about one hour and she rallied without any unusual symptoms. For ten days after the operation not a drop of urine was passed. It was thought at first that possibly the ureters had been included in the ligatures, but careful catheterization of these tubes by Dr. Collyer showed them to be patent. For three days nausea and vomiting existed. Examination of the vomited matter, of the perspiration, and of the feces revealed the presence of traces of urea. The patient's intellect remained perfectly clear. There was no headache, no twitching, no visual disturbance, no abdominal pain. At no time for eight days was the pulse tense enough to demand nitroglycerin. Coma set in on the ninth day and at the end of two hundred and forty hours from the time of operation the woman died. The treatment was eliminative, steam baths, colon irrigation with hot salt solution, strychnine in large doses, etc., etc. It required six drops of croton oil to move the bowels at first; after the first movement they were kept freely open with salines. For the first five days the stomach retained nothing. Then the patient asked for some beer; this was given her and was retained. After that she drank about two quarts of buttermilk daily. This, then, was an instance of renal anuria, in other words, entire failure on the part of the kidneys to secrete urine. The only other question is the possibility of the inclusion of the ureters in the ligatures. When the absolutely symptomless course of the case after operation is considered, the absence of pain and of eclampsic seizures, this latter theory fails. Unfortunately, owing to religious scruples on the part of the husband, we were unable to obtain an autopsy. It would be interesting to know if there are any other cases in literature in which such protracted anuria has been observed.

Dr. Wilcox said in discussion that the longest case of anuria on record was one of about six days. It occurred in a woman who was suffering from diffuse nephritis who was operated on for a tuberculous knee-joint. The anesthetic employed was chloroform. As in Dr. Grandin's case, for five days there were practically no symptoms; then coma developed and the patient died.

Dr. Grandin said in answer to a question from Dr. Coe, who suggested that there might have been a lesion of the bladder, that the patient had been catheterized by a doctor or a nurse every four hours and that the bladder had been distended by fluid in order to perform catheterization of the ureters. Under these circumstances it would have been impossible for a leak of the bladder to have escaped notice, so that the lesion in the urinary tract must have been higher up.

Membranous Croup.—Dr. Daniels reported a case of nasopharyngeal diphtheria in which the Board of Health examination failed to disclose bacilli. During the week two other children became ill with the disease which resembled diphtheria very much, as there were extensive membranous deposits in the fauces and pharynx. A subsequent Board of Health examination also failed to disclose the presence of diphtheria bacilli. Notwithstanding this failure the cases were treated with diphtheria antitoxine, and the remedy seemed to have its proper effect. Two weeks after the recovery of the first patient, paralysis of the soft palate developed and then neuritis gradually became manifest in other parts of the child's body. Even certain of the nerves of the eyes were affected so that internal strabismus was noticed. The nerves supplying the cervical muscles were also involved and the head could not be held up straight. The palsy spread downward affecting all the nerves except those of the heart and of respiration. The paralysis is now so complete and so persistently progressive that there seems danger of a fatal termination because of the paralysis alone.

In discussing the case Dr. Wilcox said that death from postdiphtheritic paralysis is extremely rare. Some three or four years ago he had some cases under treatment in which the paralysis was so complete that he feared for the patient's life. Every muscle was lamed except those of respiration and, of course, the heart

muscle. A careful review of the literature of the subject at that time showed that there were only two recorded cases in which death was due to postdiphtheritic causes. In both of these cases the muscles of respiration had been affected with the others. This shows the possibility of a fatal termination, but the rarity of the occurrence serves to demonstrate the fact that there is no serious danger of the affection proving fatal.

REVIEWS.

Essentials of Diseases of the Skin. Series of Question Compends. By Henry W. Stellwagon, M.D., Ph.D., Clinical Professor of Dermatology in Jefferson Medical College, Philadelphia. Fourth edition revised. Philadelphia: W. B. Saunders, 1899.

The work at hand is simply a revision of previous editions. The author has brought it into line with the present status of our knowledge of diseases of the skin by many small but important changes in the text. Moreover, he has added to its comprehensiveness by the description of several of the rarer affections. Otherwise the book remains about the same as its fellows, and continues to maintain the high standard of excellence for which these question compends have been noted.

Microscopy and Micro-Technique. By Albert Schneider, M.D., Ph.D., Professor of Botany, Pharmacography and Materia Medica in the Northwestern University School of Pharmacy. Chicago: Chicago Medical Book Company, 1899.

The microscope has become such an important instrument in the scientific world that a knowledge of its use is included in the most elementary training, and is a *sine qua non* for the expert in any field of natural science or medicine. Books upon its use multiply with the instruments. A very excellent type of guide-book to the beginner in schools and colleges is this neat laboratory manual of 190 pages, with ninety-five illustrations.

It is rather broader in its scope than one might expect, as it treats the microscope, not as a mere machine, but as an addition to the eyes. In it the laws of optics are emphasized with a detail that requires an elementary knowledge of geometry and trigonometry; but the practical working value of the book is by no means diminished by these mathematical considerations, since the technic is very plainly and simply set forth, and in such a manner that a beginner, either by himself or under laboratory instruction, could work out the principles that make him master of the lights and shadows, the refractions and the magnifications that extend the eye into the fields of the invisible.

It is a neat, thorough, and useful book that Dr. Schneider has prepared, and all beginners will thank him for having been so systematic and clear in his introduction to the subject of microscopy. The publishers have contributed their share to the good appearance of the volume. A large number of illustrations, the which, although taken from well-known sources, are excellently chosen, enhances the attractiveness of the pages.

THERAPEUTIC HINTS.

For Scarlatinal Desquamation.—The process can be shortened by three or more days by means of regular inunctions of a mixture containing one part glycerine and nine parts peroxide of hydrogen in fifteen-volume solution, acidulated with 1 per cent. hydrochloric acid. The entire body, except the scalp, is to be rubbed regularly with this mixture from the beginning of disquamation.—*Williams.*

For Dandruff.—

℞ Ac. salicylici 3ss
Chloralis hydrat 3i
Sodii sulphat 3iiss
Aquæ q. s. ad.....℥iv.

M. Sig. External use.

Separate hair, apply a few drops directly to scalp (a medicine dropper will be found convenient), and rub in well, and so on until whole scalp is treated. Do this every night for a week, then every second night for another week, when the head is to be washed with tar soap and the treatment resumed. The head should also be washed before beginning treatment.—*Elliot.*

For Chorea in Children.—

℞ Tinct. ferri malatis.....3ii
Liq. acidi arseniosi.....♏xvi
Aq. cinnamomi .....℥ii.

M. Sig. One teaspoonful twice a day after meals.—*Freyberger.*

Treatment of Ozena.—*Bommier* recommends the following course of treatment to be carried out by the patient:

Twice a day he is to take a nasal douche of boiled water plus a tablespoonful of salt to the liter, using for this purpose a Weber siphon, elevated about two feet above his head. During the douche he should breathe through his mouth, avoid swallowing, and keep the soft palate raised by pronouncing the vowel a. After the douche the patient is to introduce the following ointment into his nasal fossæ, using for each side a bit of the size of a bean, while holding his head backward:

℞ Menthol .....gr. iv
Ac. borici 3ss
Vaseline alb. .....℥i
Ol. geran. rosat.....gtt. xx.

M. Ft. unguentum. Sig. External use.